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Air Quality Protection Using State Implementation Plans -Thirty-Seven Years of Increasing Complexity

Arnold W. Reitze Jr.

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AIR QUALITY PROTECTION USING STATE IMPLEMENTATION PLANS — THIRTY-SEVEN YEARS OF INCREASING COMPLEXITY

PROFESSOR ARNOLD W. REITZE, JR.†

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† Professor Reitze is the J.B. & Maurice C. Shapiro Professor of Environmental Law and the Director of the Environmental LL.M. Program at the George Washington University Law School. He is of counsel to McGlinchey Stafford PLLC. The author wishes to acknowledge the assistance of Ms. Winnie Hercules, legal secretary; Ms. Germaine Leahy, head of reference; and LL.M. candidates Autumn J. Snyder Harrell and Jennifer B. Heaven.

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§ 1. THE EVOLUTION OF STATE IMPLEMENTATION PLANS

The Air Quality Act of 1967¹ established an air pollution control program based on ambient air quality protection. The Act instructed states to create Air Quality Control Regions (AQCRs), adopt air quality standards for specific pollutants, and then develop an implementation plan to achieve the air quality specified in the standards. The federal government did not set the air quality standards nor did it have much control over the development of an implementation plan.

The 1970 Clean Air Act Amendments² began to shape the Clean Air Act (CAA) into its current form. The AQCR continued as the basic jurisdiction for air pollution control.³ Primary and secondary national ambient air quality standards (NAAQS) were to be set by the Environmental Protection Agency (EPA), not the states.⁴ The 1970 law provided a comprehensive section 110, requiring each state to develop a state implementation plan (SIP) providing for attainment and maintenance of the NAAQS. The SIP was to include the elements in section 110(a)(2)(A)-(H) and had to be submitted to EPA for approval. If the SIP met the statutory requirements, the Administrator of EPA was to approve it. If, however, a state failed to submit a SIP, submitted an inadequate SIP or failed to revise a plan when required to do so, the Administrator was required to promulgate a federal implementation plan (FIP).

EPA's criteria for approval of a SIP are contained primarily in 40 C.F.R. part 51. These regulations implement the statutory requirements found in section 110.⁵ Once EPA approves a SIP, its decision is codified in 40 C.F.R. part 52, and the SIP becomes enforceable as federal and state law.⁶ EPA can enforce the SIP, even if

1. Pub. L. No. 90-148, 81 Stat. 485 (authorizing planning grants to air pollution control agencies, expanding research provisions, protecting Nation's air resources to promote public health and establish air quality standards).

2. Pub. L. No. 91-604, 84 Stat. 1676 (empowering EPA to regulate hazardous air pollutants by setting emission standards at levels that provide margin of safety to protect public health).

3. Clean Air Act § 107, 42 U.S.C. § 7407 (2000) (stating jurisdiction for air pollution control).

4. *See id.* at §§ 108, 109 (providing rules for national primary and secondary ambient air standards).

5. *See id.* at § 110(a)(3) (stating "Each implementation plan submitted by a State under this chapter shall be adopted by the State after reasonable notice and public hearing.").

6. *See id.* at § 113 (describing federal enforcement of SIP).

revisions have been proposed by the state, and even if EPA unreasonably delays reviewing the revisions.⁷

SIP's encompass a program for each AQCR in a state.⁸ Local governments participate in developing the requirements that appear in the SIP, and a state may allow local governments to impose more stringent emission controls.⁹ When a state develops a SIP, it may adopt programs that are economically or technologically infeasible. The CAA does not give EPA authority to question the wisdom of a state's choice.¹⁰ Sources that are adversely affected may be able to pursue remedies in the state administrative and/or judicial system.¹¹ Other challenges to the SIP may be made in the U.S. Court of Appeals for the appropriate circuit within sixty days of promulgation or approval (with limited exceptions).¹² The scope of review, however, is limited, and deference is given to EPA.¹³ Because a state is allowed to select economically or technologically infeasible

7. *See* *Gen. Motors Corp. v. United States*, 496 U.S. 530, 540-41 (1990) (noting that nothing in statute limits EPA's authority to enforce SIP). *But see* David Currie, *Relaxation of Implementation Plans Under The 1977 Clean Air Act Amendments*, 78 MICH. L. REV. 155 (1979) (arguing provision in 1977 amendment provide temporary relief from CAA's statutory inflexibility).

8. *See* Clean Air Act § 107, 42 U.S.C. § 7407 (2000). Section 107(a) provides: Each State shall have the primary responsibility for assuring air quality within the entire geographic area comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each quality control region in such state.

Id.

9. *See, e.g.,* *Olson v. State*, 803 P.2d 448 (Ariz. 1990) (finding that state may enforce emission standard more stringently than standard under state implementation plan).

10. *See* *Train v. NRDC*, 421 U.S. 60, 79 (1975) ("[S]o long as the ultimate effect of a State's choice of emission limitations is compliance with the national standards for ambient air, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation."). However, the Department of Transportation requires long-range transportation plans to demonstrate that resources are reasonably expected to be made available to carry out the plan. 23 U.S.C. § 134(g)(2) (2000) (discussing development of long-range transportation plan).

11. *See* *Appalachian Power Co. v. EPA*, 477 F.2d 495, 499 (4th Cir. 1973) (addressing role of judicial review and state administrative system). SIP revisions require a hearing, and because the hearing is considered a rulemaking and not an adjudicatory hearing, the major right of interested parties is limited to adequate notice. Clean Air Act § 110(a)(1), 42 U.S.C. § 7410(a)(1) (requiring state to adopt and submit state plan after reasonable notice and public hearings); *see* *Appalachian Power Co. v. EPA*, 579 F.2d 846, 850 (4th Cir. 1978) (stating that reasonable notice is required).

12. *See* Clean Air Act § 307(b)(1), 42 U.S.C. § 7607(b)(1) (2000) (providing judicial review in certain circumstances).

13. *See* *Conn. Fund for the Env't. v. EPA*, 672 F.2d 998, 1010 (2d Cir. 1982) (noting that agency administering statute receives deference).

measures (as long as they will meet air quality goals), appeals to the federal courts cannot be based on lack of feasibility of the selected control measures. Federal court review is concerned with whether the SIP meets the criteria of section 110(a)(2). A state, however, may go beyond section 110 and submit a plan more stringent than federal law requires.¹⁴

EPA's role in the SIP development process is limited.¹⁵ Section 110 leaves to the states "the power to determine which sources would be burdened by the regulations and to what extent."¹⁶ EPA may devise its own plan if a state fails to submit one that satisfies CAA section 110(c), but it cannot specify what must be in a SIP that is adequate to attain and maintain the NAAQS.¹⁷ EPA may not, under the guise of partially approving a SIP, render the plan more stringent than the state intended.¹⁸ "[T]he 1990 CAA Amendments did not change the substance of the SIP approval process or alter the division of responsibilities between EPA and the states in the section 110 process."¹⁹ CAA section 110(a)(2)(H)(ii)²⁰ and the new CAA section 110(k)²¹ that replaces the prior section 110(a)(3)(A) did not give authority to EPA to require states to in-

14. See Clean Air Act § 116, 42 U.S.C. § 7416 (2000) (defining state authority to adopt and enforce standards, limitations and requirements).

15. See *id.* at § 110(a)(1) (explaining SIP revisions require hearing because hearing is considered rulemaking and more than adjudicatory hearing where major right of interested parties is notice); see *Appalachian Power Co.*, 579 F.2d at 850 (requiring reasonable notice).

16. *Union Elec. Co. v. EPA*, 427 U.S. 246, 269 (1976) (prohibiting EPA or federal court from rejecting state legislative choices when national standards are met).

17. See *EPA v. Brown*, 431 U.S. 99, 103 (1977) (declining to pass upon EPA regulations in view of government's position that challenged transportation plans were invalid if not modified); see also *Train v. NRDC*, 421 U.S. 60, 79 (1975) (allowing EPA to devise and promulgate specific plan only if state fails to submit implementation plan satisfying section 110(c) standards); *Air Pollution Control Dist. v. EPA*, 739 F.2d 1071, 1075 (6th Cir. 1984) (describing EPA's responsibility under CAA).

18. See *Bethlehem Steel Corp. v. Gorsuch*, 742 F.2d 1028, 1035-36 (7th Cir. 1984) (noting Congress did not intend to allow EPA to revise state regulation to make it stricter); see also *Florida Power & Light Co. v. Costle*, 650 F.2d 579, 587 (5th Cir. 1981) (stating EPA cannot remove words of limitation procedures for making state regulation stricter).

19. *Virginia v. EPA*, 108 F.3d 1397, 1410 (D.C. Cir. 1997), *modified*, 116 F.3d 499 (D.C. Cir. 1997) (determining Congress did not intend to give EPA authority when it calls upon states to revise implementation plans).

20. 42 U.S.C. § 7410(a)(2)(H)(ii) (2000) (providing revision of plan "when- ever the Administrator finds . . . the plan is substantially inadequate to attain the national ambient air quality standard which it implements. . . .").

21. *Id.* at § 7410(k) (2000) (describing EPA action on plan submissions).

sert control measures that EPA selects.²² The 1975 interpretation in *Train v. NRDC*²³ continues to apply to section 110(k)(5).²⁴ Each state determines an emissions reduction program, subject to EPA approval.²⁵ For states in the Ozone Transport Region, however, CAA section 184 gives EPA the authority to mandate control measures recommended by the Ozone Transport Commission (OTC).²⁶

Although states have broad authority to design programs, EPA has the final authority to determine whether the SIP meets the CAA. "EPA must disapprove a state proposed SIP if it would interfere with the state's attainment and maintenance of the NAAQS."²⁷ If a SIP provision is violated, EPA Administrator may enforce the SIP. Claims of economic or technological infeasibility are relevant only to fashion an appropriate compliance order under section 113(a)(4) and as a defense in criminal enforcement actions. The SIP cannot be attacked as part of a defense to an enforcement action.²⁸ Congress' intention was that existing sources of pollutants would either meet the SIP requirements or close down.²⁹ Once a SIP is approved, citizens' suits can be used to force states to meet commitments to implement air pollution controls provided in the SIP.³⁰

Prior to 1990, EPA either approved, conditionally approved or disapproved SIPs.³¹ EPA could also partially approve revisions

22. See *Virginia*, 108 F.3d at 1404 (concluding § 110 did not give EPA this authority).

23. 421 U.S. 60 (1975).

24. See *Virginia*, 108 F.3d at 1407-09 (discussing Supreme Court's decision in *Train*).

25. See *NRDC v. Browner*, 57 F.3d 1122, 1123 (D.C. Cir. 1995) (explaining how CAA establishes partnership between EPA and states to achieve national air quality goals).

26. See *Virginia v. Browner*, 80 F.3d 869, 881-83 (4th Cir. 1996). But see *Virginia*, 108 F.3d at 1414 ("Section 184 limits EPA to requiring the control measures the Ozone Commission proposes as 'necessary' to cure the problem the Commission identifies.").

27. *Mich. Dept. of Env't. Quality v. Browner*, 230 F.3d 181, 183 (6th Cir. 2000) (stating EPA has final authority to determine whether SIP meets CAA requirements).

28. See *Appalachian Power Co. v. EPA*, 477 F.2d 495 (4th Cir. 1973).

29. See *Union Elec. Co. v. EPA*, 427 U.S. 246, 270 (1976) (noting sponsors and floor leaders of CAA clearly intended that industries unable to comply with approved state implementation plans would close down).

30. See *Am. Lung Ass'n v. Kean*, 871 F.2d 319, 324-25 (3d Cir. 1989) (concluding CAA's plain language permits citizen suits).

31. See *Nat'l Steel Corp. v. Gorsuch*, 700 F.2d 314, 319 (6th Cir. 1983) (involving EPA approving, conditionally approving and disapproving Michigan's implementation plan); see also *Conn. Fund for the Env't, Inc. v. EPA*, 672 F.2d 998, 1005

based on inferred authority in section 110(a)(3)(A).³² The 1990 law in section 110(k)(3) limits the use of partial disapproval and restricts the use of conditional approval to situations where approval can be obtained within one year.³³ EPA also was given expanded authority in section 110(k)(5) to call for plan revisions that do not interfere with applicable requirements concerning attainment.³⁴ In addition, EPA received expanded sanction authority in section 179.

§ 1(a). The 1977 CAA Amendments

The 1970 CAA did not say what happened if a state failed to meet the primary standards by the statutory deadline. The six criteria pollutants are particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), photochemical oxidants measured as ozone (O₃) and lead.³⁵ In addition, non-methane hydrocarbons or volatile organic compounds (VOCs) are regulated to control the formation of photochemical oxidants (smog). Under the 1970 CAA, the date for attainment was May 31, 1975, with a few extensions to mid-1977. The welfare-related secondary standards were to be attained within a "reasonable time."³⁶ Most SIPs interpreted "reasonable time" as the primary standard attainment date. By 1975, many states had air quality control regions (AQCRs) that failed to meet the national standards.³⁷ EPA's pre-1977 position regarding nonattainment was to prohibit through

(2d Cir. 1982) (finding EPA's conditional approval of antipollution plan valid); *City of Seabrook, Texas v. EPA*, 659 F.2d 1349, 1354-55 (5th Cir. 1981) (upholding EPA's interpretation of § 110 to permit approving, conditionally approving and/or disapproving SIPs).

32. See *Pub. Serv. Co. v. EPA*, 682 F.2d 626, 632-34 (7th Cir. 1982) (determining EPA had authority to partially approve revised regulation in SIP).

33. See Clean Air Act § 110(k)(3)-(4), 42 U.S.C. § 7410(k)(3)-(4) (2000) (explaining full and partial approval, disapproval and conditional approval).

34. See *id.* at § 110(l) (prohibiting EPA from revising plan if revision would interfere with any applicable requirement concerning attainment and reasonable further progress).

35. See generally National Primary and Secondary Ambient Air Quality Standards 40 C.F.R. § 50 (2003) (listing NAAQS pollutants).

36. See Pub. L. No. 91-604, 84 Stat. 1676 (1970) (explaining time for reaching attainment was determined by adding times specified in 1970 CAA § 110); see also Pub. L. No. 91-604, § 110(b), (e), (f) (1970) (creating time extensions for attainment); Pub. L. No. 91-604, § 110(a)(2)(A)(ii) (1970) (describing welfare standard).

37. See *Navistar Int'l Transp. Corp. v. EPA*, 941 F.2d 1339, 1342 (6th Cir. 1991) (noting these states had previously approved SIPs); see also National Ambient Air Quality Standards: State Attainment Status, 43 Fed. Reg. 8962, 8963-64 (Mar. 3, 1978) (setting forth rules for attainment status of states and summarizing state designations).

regulations the construction or modification of any facility that would interfere with attainment or maintenance of a NAAQS. To prevent this approach from stopping nearly all growth in developed areas, EPA adopted an "offset policy" on December 21, 1976, that allowed growth in nonattainment areas if air quality continued to improve.³⁸ Congress approved this policy in the 1977 CAA as subchapter I part D of the new Act.³⁹ Congress also imposed requirements in a new Subchapter I, Part C on clean areas that met the NAAQS. Clean areas were subject to a statutory prevention of significant deterioration (PSD) program to protect existing high quality air, which was based on EPA's preexisting regulatory program.

The 1977 CAA Amendments modified many of the regulatory requirements found in the prior program. It required states to submit revised SIPs for nonattainment areas.⁴⁰ EPA was either to approve such revisions by June 30, 1979 or to impose sanctions.⁴¹ Under the 1977 amendments, states had to meet CAA primary NAAQS by December 31, 1982, or, for automotive related pollutants, by December 31, 1987.⁴² To use the latter date, however, more stringent SIP provisions must be implemented.⁴³

A new section 107(d)⁴⁴ required EPA to publish a list of the attainment status of areas in the states as of August 7, 1977. The first list was published on March 3, 1978, and has been revised several times.⁴⁵ Although many AQCRs are nonattainment, the PSD rules apply in any area of an AQCR where at least one NAAQS is attained. Thus, both PSD and nonattainment requirements are ap-

38. Air Quality Standards; Interpretative Ruling, 41 Fed. Reg. 55,524, 55,525-30 (Dec. 21, 1976) (establishing offset policy for sources that will progress toward achieving NAAQS).

39. See The 1997 Clean Air Act Amendments, Pub. L. No. 95-95, § 129(a), 91 Stat. 685 (codified in 42 U.S.C. § 7502 (2000)) ("[T]he interpretive regulation of the Administrator of the Environmental Protection Agency. . . shall apply except that the baseline to be used for determination of appropriate emissions offsets under such regulation shall be the applicable implementation plan of the State in effect at the time of application for a permit by a proposed major stationary source. . . .").

40. See Clean Air Act § 172, 42 U.S.C. § 7502 (prior to 1990) (explaining requisite provisions of revised plans).

41. See *id.* at § 176 (stating limitations on EPA approval of revised SIPs).

42. See Clean Air Act § 172, Pub. L. No. 95-95, title I, § 129(b), 91 Stat. 746 (explaining nonattainment plan provisions).

43. Clean Air Act § 173, Pub. L. No. 95-95, title I, § 129(b), 91 Stat. 748 (discussing requirements of permit program under § 172(b)(6)).

44. 42 U.S.C. § 7407(d) (2000) (explaining designations and its standards).

45. See Designation of Areas for Air Quality Planning Purposes, 40 C.F.R. § 81 (2003) (stating first date of publication).

plicable in most AQCRs. The relevant nonattainment provisions of the 1977 Act were the following:

- (1) areas must make "reasonable further progress" each year toward meeting the NAAQS;⁴⁶
- (2) primary standards for photochemical oxidants and CO were to be attained by 1982 where reasonably available control measures (RACM) could achieve the standard;⁴⁷
- (3) new or modified major sources were required to obtain a permit and to meet a "lowest achievable emission rate" (LAER) that was determined on a case-by-case basis, but was at least as stringent as the new source performance standard (NSPS);⁴⁸
- (4) sources could not contribute to violations in other states;⁴⁹
- (5) existing sources covered by EPA guidelines had to meet emissions requirements based on reasonably available control technology (RACT);⁵⁰
- (6) in ozone and CO nonattainment areas, a transportation control plan was to be part of the SIP revision;⁵¹
- (7) no major stationary source was to be constructed if its emissions would contribute to air pollution for which the area was in a nonattainment status;⁵² and

46. Clean Air Act § 173(1)(A) (prior to 1990) (explaining permit requirement that allows permit to be issued if permit to construct or modify will represent reasonable further progress).

47. *Id.* at § 172(a)(2) (setting attainment dates for nonattainment areas).

48. *Id.* at § 173(2) (allowing permit to be issued if proposed source is required to comply with lowest achievable emission rate).

49. *Id.* at § 110(a)(2)(E).

50. EPA interpreted RACT to be "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." *Michigan v. Thomas*, 805 F.2d 176, 180 (6th Cir. 1986) (upholding interpretation). EPA requires RACT in a N/A area unless the state demonstrates it can achieve the NAAQS without RACT. Sources can be required to meet RACT requirements without the need to show the source contributes to nonattainment. See *Nat'l Steel Corp. v. Gorsuch*, 700 F.2d 314, 322-24 (6th Cir. 1983) (rejecting petitioner's argument that imposing RACT requirement on given source without showing how that source contributes to nonattainment is unreasonable). EPA's interpretation of RACT under the 1977 Clean Air Act Amendments were incorporated by reference in the 1990 Clean Air Act Amendments. Clean Air Act § 182(a)(2)(A), 42 U.S.C. § 7511a(a)(2)(A) (2000).

51. Clean Air Act § 174 (prior to 1990) (explaining role of transportation control plans in implementation plan preparation).

52. *Id.* at § 173(1)(B) (issuing permit if major stationary source will not contribute or cause to excessive emission levels).

(8) any state that had nonattainment areas could adopt the more stringent California standards for new motor vehicles.⁵³

For ozone, CO and PM₁₀ nonattainment areas, SIPs are to be prepared by an organization that shall include elected officials of local governments in the affected area and representatives of other state and regional organizations.⁵⁴ For CO or ozone nonattainment regions, metropolitan planning organizations designated to conduct the continuing, cooperative and comprehensive transportation planning process under section 134 of Title 23 are expected to play a significant role in preparing the SIP.⁵⁵

If an area would not meet ozone or CO primary standards by the end of 1982, despite adopting all "reasonably available control measures," an extension until 1987⁵⁶ was allowed. To obtain such an extension, the SIP was to be revised by July 1, 1982⁵⁷ and was to include the following:

(1) reasonably available control technology (RACT) for more and smaller existing source categories of emissions;⁵⁸

(2) an inspection and maintenance (I/M) program for existing in-use motor vehicles;⁵⁹

(3) implementation of each transportation control measure listed in the CAA unless such measures were not justified;⁶⁰ and

(4) a required showing that the benefits outweigh the costs before a permit was granted to a major source.⁶¹

53. Clean Air Act § 177, 42 U.S.C. § 7507 (2000) (describing new motor vehicle emission standards in nonattainment areas).

54. *See id.* at § 174(a) (describing planning procedure for any ozone, carbon monoxide or PM₁₀ nonattainment area).

55. *See id.* (explaining role of metro organizations in preparing implementation process).

56. *See* Clean Air Act § 172(a)(2) (prior to 1990) (setting attainment dates for nonattainment areas).

57. *See id.* at § 172(c) (requiring state plan revision to be submitted before July 1, 1982).

58. *Id.* at § 172(b)(3) (planning provisions require "reasonable further progress including such reduction in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology. . .").

59. *Id.* at § 172(b)(11)(B).

60. *Id.* at § 176.

61. Clean Air Act § 172(b)(11)(A) (prior to 1990) (discussing program which requires analysis of alternative sites, size, production processes and environmental

As the 1987 deadline approached, many areas that were nonattainment in 1977 still had not attained all the standards. Other areas had come into compliance because EPA had relaxed the ozone standard from 0.08 parts per million (ppm) to 0.12 ppm on February 8, 1979.⁶² In July 1987, EPA proposed to reject air pollution control plans for fourteen cities because of deficiencies.⁶³ In November 1987, EPA proposed a new round of planning to achieve attainment.⁶⁴ EPA believed it had sufficient authority under the CAA to set new attainment dates. The law, however, was not clear, and the policy of extending deadlines was considered by others to be illegal.⁶⁵

About sixty nonattainment areas, with a combined population of almost 100 million, would have up to eight more years to meet standards under EPA's proposed post-1987 Ozone and CO Policy. They would escape sanctions if pollution emissions were reduced by at least three percent per year.⁶⁶ EPA's post-1987 strategy focused on areas that failed to attain the NAAQS by December 31, 1987 in order to correct SIP deficiencies and implement the 1982 SIPs, adopt enhanced inspection and maintenance (I/M) programs, and submit revised SIPs that demonstrated attainment over an expanded planning area as expeditiously as practicable by achieving a reduction of at least three percent per year in the base year emissions.⁶⁷

control techniques for proposed source to demonstrate benefits outweigh environmental and social costs).

62. Revisions to the National Ambient Air Quality Standards for Photochemical Oxidants, 44 Fed. Reg. 8202 (Feb. 8, 1979) (revising criteria upon which 1971 primary and secondary photochemical oxidant standards were based).

63. *See* State Implementation Plans for Nonattainment Areas for Ozone and Carbon Monoxide, 52 Fed. Reg. 26,404 (July 14, 1987) (codified at 40 C.F.R. pts. 51-52) (proposing to disapprove SIP for certain urban areas).

64. State Implementation Plans; Approval of Post 1987 Ozone and Carbon Monoxide Plan Revisions for Areas Not Attaining the National Ambient Air Quality Standards; Notice, 52 Fed. Reg. 45,044 (proposed Nov. 24, 1987) (discussing program developed by EPA to address likelihood that many areas in country will not attain national ambient air quality standards for ozone and carbon monoxide).

65. U.S. GEN. ACCOUNTING OFFICE, AIR POLLUTION: EPA'S OZONE POLICY IS A POSITIVE STEP BUT NEEDS MORE LEGAL AUTHORITY: REPORT TO CHAIRMAN, SUBCOMMITTEE ON ENERGY AND COMMERCE, HOUSE OF REPRESENTATIVES (Nov. 1988) [GAO/CRED-89-28].

66. *See* State Implementation Plans; Approval of Post-1987 Ozone and Carbon Monoxide Plan Revisions for Areas Not Attaining the National Ambient Air Quality Standards; Notice, 52 Fed. Reg. at 45,044 (explaining how to bring urban areas into attainment).

67. *See* State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 13,498, 13,501 (proposed Apr. 16, 1992) (codified at 40 C.F.R. pt. 52) (revamping require-

In late 1987, nonattainment areas were given a temporary reprieve by a Continuing Resolution proposed by Senator George Mitchell (D-ME) and Representative Silvio Conte (R-MA). The Mitchell-Conte Amendment prohibited EPA from imposing the otherwise mandatory sanctions prior to August 31, 1988.⁶⁸ It was expected that new federal legislation would be enacted to deal with this issue, but Congress ended 1988 without enacting such legislation. Meanwhile, in November 1988, a federal district court in *Natural Resources Defense Council, Inc. v. New York State Department of Environmental Conservation*⁶⁹ held that EPA had a mandatory duty to require SIP revisions.

On May 26, 1988, in accordance with CAA section 110(a)(2)(H),⁷⁰ EPA began issuing notices of SIP inadequacy (SIP calls) in letters to the governors of states with areas that failed to attain the ozone and CO standards or that contributed to violations of the standards.⁷¹ In February 1989, EPA set a date of September 1991 as the time by which New York and New Jersey had to revise their SIPs for the New York City area to assure attainment of the CO and ozone standards.⁷² In 1990, environmental groups litigated to force EPA to implement the CAA,⁷³ and the court ordered the agency to promulgate Federal Implementation Plans (FIPs) where states had failed to act. Some of these cases were mooted when the 1990 Amendments created new requirements.⁷⁴

ments for areas that failed to attain NAAQS for ozone, carbon monoxide, particulate matter, sulfur dioxide, nitrogen dioxide and lead by deadline set by statute).

68. See Mitchell-Conte Amendment to the 1987 Continuing Resolution, Pub. L. No. 100-202, 100 Stat. 1399.

69. 700 F. Supp. 173 (S.D.N.Y. 1988).

70. 42 U.S.C. § 7410(a)(2)(H) (2000) (stating when state implementation plans for national primary and secondary ambient air quality standards can be revised).

71. See Air Programs; Approval and Promulgation of Implementation Plans Compliance with the Statutory Provisions of Part D and Section 110 of the Clean Air Act, 53 Fed. Reg. 34,500 (Sept. 7, 1988) (codified at 40 C.F.R. pt. 52) (giving formal notice to governors of states that SIPs for certain areas were substantially inadequate because of failure to attain NAAQS and requiring states to submit SIP revisions for CAA approval).

72. See VI Envtl. Pol'y Alert, Inside EPA, Feb. 8, 1989, at 3:5.

73. See, e.g., *Delaney v. EPA*, 898 F.2d 687 (9th Cir. 1990) (holding EPA must adhere to guidelines to assure compliance with CAA).

74. See, e.g., Approval and Promulgation of Implementation Plans; California (South Coast Air Basin); Plans for Ozone and Carbon Monoxide, 55 Fed. Reg. 36,458, 36,460 (Sept. 5, 1990) (codified at 40 C.F.R. pts. 51-52 (2003)) ("[A]mendments imminent to the Clean Air Act will almost certainly change the nature and scope of EPA's responsibilities before EPA issues in final form the plan to be proposed here.").

In addition to the basic attainment planning requirements that were discussed in the proposed post-1987 Ozone and CO Policy, the 1977 CAA Amendments included preconstruction permitting requirements for major new and modified sources under the PSD and nonattainment new source review (NSR) program.⁷⁵ In 1980, EPA adopted final regulations detailing SIP requirements to implement the NSR program required by parts C and D.⁷⁶

§ 1(b). The 1990 CAA Amendments

The CAA Amendments of 1977 added subchapter I, Part D, sections 171-178⁷⁷ to impose additional requirements on nonattainment areas. These requirements were tied to the SIP revision requirements found in CAA section 110.⁷⁸ Findings made under section 107(d) determined whether an area was nonattainment and subject to Part D.⁷⁹ In the 1990 Amendments, the 1977 Amendments continued as Part D, subpart 1 (sections 171-178).⁸⁰ New requirements were added as subpart 2 (sections 181-185B)⁸¹ for ozone nonattainment areas. Subpart 3 (sections 186-187)⁸² was added to regulate carbon monoxide nonattainment areas. Subpart 4 (sections 188-190)⁸³ was added for particulate matter nonattainment areas, and subpart 5 (sections 191-192),⁸⁴ added provisions for areas designated nonattainment for sulfur oxides, nitrogen dioxide or lead. Subpart 6 made miscellaneous changes to other parts of the CAA and added section 193.⁸⁵ If a conflict exists between the section 173 requirements⁸⁶ and the pollutant-specific

75. See Clean Air Act §§ 165, 173, 42 U.S.C. §§ 7475, 7503 (2000) (explaining preconstruction and new source permit requirements).

76. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans, 45 Fed. Reg. 52,676, 52,678 (Aug. 7, 1980) (codified at 40 C.F.R. pts. 51, 52, 124) (requiring modifications to meet appropriate nonattainment NSR under SIP for pollutant).

77. 42 U.S.C. §§ 7501-7508 (2000) (discussing plan requirements for nonattainment areas).

78. See *id.* at § 7410 (2000) (stating SIP revision requirements).

79. See *id.* at § 7407(d) (2000) (stating whether attainment area was subject to CAA part D).

80. See *id.* at §§ 7501-7508 (2000) (defining plan requirements for nonattainment areas).

81. *Id.* at §§ 7511-7511(f) (2000) (adding new requirements regarding ozone attainment areas).

82. 42 U.S.C. §§ 7512, 7512a (2000) (describing classification and attainment dates).

83. *Id.* at §§ 7513-7513b (discussing initial classifications and need to reclassify as serious).

84. *Id.* at §§ 7514-7514a (detailing plan submission deadlines).

85. *Id.* at § 7515 (detailing savings provisions).

86. *Id.* at § 7503 (anticipating possible conflict with other CAA sections).

requirements added by sections 181-192,⁸⁷ the pollutant-specific requirements control.

The 1990 CAA Amendments divide ozone nonattainment areas based on their degree of pollution. Ozone nonattainment areas are designated as marginal, moderate, serious, severe 1, severe 2, and extreme.⁸⁸ CO nonattainment areas are designated as moderate or serious.⁸⁹ All PM₁₀ nonattainment areas are considered moderate; however, EPA has the power to determine that some of the PM₁₀ nonattainment areas cannot practicably attain the standard by the deadline and, therefore, should be reclassified as serious.⁹⁰ In addition, the 1990 Amendments imposed new netting requirements concerning offset ratios for ozone⁹¹ nonattainment areas, depending upon the degree of nonattainment. In extreme ozone areas, any net increase in emissions triggers offset and control requirements.⁹² In other areas, some net increase in emissions may occur without making offsets necessary.

In moderate or worse ozone nonattainment areas, an inspection and maintenance (I/M) program for in-use motor vehicles is required.⁹³ Consequently, about 110 areas were subject to an I/M program, and forty new programs had to be developed for areas that were not subject to I/M requirements under the prior law.⁹⁴ In serious, severe and extreme ozone nonattainment areas, an enhanced I/M program is required.⁹⁵ This requires inspections to be performed while the vehicle is under simulated driving conditions, or "load," to determine whether emissions controls, including NO_x

87. 42 U.S.C. §§ 7511-7514a (2000) (determining controlling statute to dispel any possible conflict).

88. See Clean Air Act § 181, 42 U.S.C. § 7511 (2000) (listing designations of nonattainment areas).

89. See *id.* at § 186 (listing possible designations for carbon monoxide nonattainment areas).

90. See *id.* at § 188 (explaining EPA has power to reclassify PM₁₀ nonattainment areas).

91. See *id.* at § 182 (providing requirements for states with areas classified as marginal).

92. See *id.* at § 182(e)(2) (stating result if net increase in emissions triggers occurs).

93. See Clean Air Act § 182(b)(4), 42 U.S.C. § 7511a(b)(4) (2000) (referring to requirements regarding implementation of motor vehicle inspection and maintenance).

94. See generally Arnold W. Reitze, Jr., *Federalism and the Inspection and Maintenance Program Under the Clean Air Act*, 28 PAC. L.J. 1461 (1996) [hereinafter *Federalism*]; Arnold W. Reitze, Jr. & Barry Needleman, *Control of Air Pollution From Mobile Sources Through Inspection and Maintenance Programs*, 30 HARV. J. ON LEGIS. 409 (1993).

95. See Clean Air Act § 182(c)(3), 42 U.S.C. § 7511a(c)(3) (2000) (stating when enhanced I/M progress is required).

controls, are performing properly.⁹⁶ In addition to the I/M requirements, any state with nonattainment areas may adopt the more stringent California emission standards for new motor vehicles.⁹⁷

New requirements were imposed on motor vehicle fuels. Fuel volatility was regulated more stringently.⁹⁸ Reformulated fuel must be used in summertime in specified nonattainment areas, but other areas may require the use of such fuels to meet their revised SIP requirements.⁹⁹ Carbon monoxide nonattainment areas above a 9.5 ppm design value must use oxygenated fuels in cold weather months.¹⁰⁰

The 1990 Amendments rewrote the planning procedures of section 174. New planning procedures were required to be developed. The SIP revisions must be prepared by an organization that includes elected officials of local governments in the affected area, representatives of the state air quality agency, the state transportation agency, the metropolitan planning organization and any other organization with air pollution responsibilities.

CAA section 110(k)(5) allows a state to petition EPA for help with nonattainment areas (N/A) caused by out-of-state transported air pollution without requiring the impacted state to name specific sources responsible for the pollution. Such a section 110-based action involves federal enforcement against a state based on its violation of section 110(a)(2)(D). Alternatively, CAA section 126(b) provides for a downwind state to petition EPA concerning adverse impacts from an out-of-state source.¹⁰¹ If EPA finds that a source's emissions interfere with another state's attainment of its air quality goals, it may impose additional requirements on individual sources pursuant to section 126(c).

The 1990 Amendments provide that if the AQCR attains the primary ambient air quality standard and seeks redesignation under

96. Inspection/Maintenance Program Requirements, 57 Fed. Reg. 52,950, 52,953-4 (Nov. 5, 1992) (setting forth I/M program requirements).

97. See Clean Air Act § 177, 42 U.S.C. § 7507 (2000) (stating when states have option of adopting more stringent standards). See also Arnold W. Reitze, Jr., *Mobile Source Air Pollution Control*, 6 ENVTL. LAW. 309 (2000).

98. See Clean Air Act § 211(h), 42 U.S.C. § 7545(h) (2000) (stating Reid Vapor Pressure requirements).

99. See *id.* at § 211(k) (providing regulations regarding reformulated gasoline).

100. See *id.* at § 211(m) (providing guidelines for oxygenated fuels in carbon monoxide nonattainment areas); see also Arnold W. Reitze, Jr., *The Regulation of Fuels and Fuel Additives Under Section 211 of the Clean Air Act*, 29 TULSA L.J. 485 (1994).

101. See *infra* § 5(d).

section 107(d),¹⁰² it also must revise the SIP to provide a maintenance plan for at least ten years to assure continued compliance with the NAAQS.¹⁰³ Section 107(d)(3)(E) of the 1990 Clean Air Act Amendments provides the following five requirements that an area must meet in order to be redesignated from nonattainment to attainment:

- (1) the area must have attained the applicable NAAQS;
- (2) the area must have a fully approved SIP under section 110(k) of CAA;
- (3) the air quality improvement must be permanent and enforceable;
- (4) the area must have a fully approved maintenance plan pursuant to section 175A of the CAA; and
- (5) the area must meet all applicable requirements under section 110 and Part D of the CAA.¹⁰⁴

§ 1(c). Sources Subject To The SIP

Stationary sources regulated under Subchapter I require emissions control as part of the SIP process.¹⁰⁵ New sources, modified sources and hazardous emission sources usually are subject to specific federal emission limits. Stationary sources classified as "major" are subject to more requirements, including the need to obtain major source permits. Generally, sources with the potential to emit 100 or more tons of air pollution per year are major, although

102. See 42 U.S.C. § 7407(d) (2000) (providing designations of air quality control regions).

103. See Clean Air Act § 175A, 42 U.S.C. § 7505a (2000) (requiring revised SIP if redesignation obtained); see also *Sierra Club v. EPA*, 99 F.3d 1551 (10th Cir. 1996).

104. 42 U.S.C. § 7407 (2000) (setting forth five requirements for redesignation to attainment).

105. See *id.* at § 7411(a)(3) (2000) (defining stationary source). Occasionally a question arises of whether a source is a stationary source that is subject to subchapter I requirements. For example, diesel engines used to generate electricity have been held to be stationary sources. *Town of Brookline v. Comm'r of the Dept. of Envtl. Quality Eng'g.*, 439 N.E.2d 372 (1982). A jet engine test facility operated by the military has also been held to be a stationary source. *California ex rel. State Air Res. Bd. v. The Dep't of the Navy*, 431 F. Supp. 1271 (N.D. Cal. 1977), *aff'd*, 624 F.2d 885 (9th Cir. 1980). In a 1993 decision, the United States Court of Appeals for the First Circuit had to decide whether ventilation buildings that would vent motor vehicle exhaust from an underground highway and harbor tunnel were a stationary source within the meaning of the Clean Air Act. The court held they were not stationary sources. *Sierra Club v. Larson*, 2 F.3d 462 (1st Cir. 1993). The court relied on the *Chevron* doctrine to require deference to agency decisions when the statute is ambiguous and the legislative history is silent, and the policies for different interpretations are closely balanced. *Id.* at 464-65.

smaller sources also may qualify as major.¹⁰⁶ Stationary sources too small to be efficiently controlled by focused air pollution requirements may be regulated as area sources. Area sources are controlled by requirements applicable to their industrial classification. For example, gasoline stations and dry cleaners may be subject to control technologies or management practices applicable to a category of area sources.

The 1990 CAA Amendments changed the definition of "major source" to include many additional facilities. Under the old law, a source was major if it had the potential to emit 100 tons per year (TPY) of a pollutant after taking into account the use of emission controls.¹⁰⁷ The 1990 CAA Amendments lowered the threshold for imposing more stringent new source requirements depending on the pollutants the source emits and the degree of nonattainment in the area where it is located. The new trigger is as low as ten TPY for VOC or NO_x in an extreme ozone nonattainment area,¹⁰⁸ and is fifty TPY for CO in a serious nonattainment area.¹⁰⁹

Indirect sources are sources that do not emit pollutants, but they attract motor vehicles that do. Examples would include parking lots, highways and garages. Since 1977, the CAA has barred EPA from requiring such sources to be regulated, but a state may regulate them as part of its SIP.¹¹⁰

Motor vehicles are not regulated by the SIP until after the vehicle is first sold. Mobile sources, primarily motor vehicles, are regulated under Subchapter II. This subchapter imposes federal requirements on new motor vehicles. States, except California, have limited authority over new vehicles,¹¹¹ although states with nonattainment areas may adopt California standards.¹¹² In-use mo-

106. See Clean Air Act § 302(j), 42 U.S.C. § 7602(j) (2000) (defining major stationary source). California, by statute, exempted agricultural operations from the CAA's requirements even if they were major sources. EPA issued a SIP call, requiring California to regulate agricultural sources in its SIP. Finding of Substantial Inadequacy of Implementation Plan; Call for California State Implementation Plan Revision, 68 Fed. Reg. 37,746 (June 25, 2003) (to be codified at 40 C.F.R. pt. 52).

107. See Clean Air Act § 302(j), 42 U.S.C. § 7602(j) (2000) (defining major source prior to 1990 amendments).

108. See *id.* at § 182(e) (stating new trigger for VOC or NO_x in extreme nonattainment areas).

109. See *id.* at § 187(c)(1) (stating trigger for serious nonattainment areas).

110. See *id.* at § 110(a)(5); see also *South Terminal Corp. v. EPA*, 504 F.2d 646 (1st Cir. 1974) (finding states can regulate indirect sources, but EPA cannot).

111. See Clean Air Act § 209, 42 U.S.C. § 7543 (2000) (deciding California may regulate new vehicles).

112. See *id.* at § 177 (stating that states may opt to adopt California's non-stringent standards).

tor vehicles also may be subject to SIP requirements¹¹³ and transportation sources of air pollution may be subject to a transportation control plan that is part of the applicable SIP.¹¹⁴

§ 2. THE SIP PROCESS

The basic program for nonattainment areas begins with the nonattainment plan provisions of CAA section 172¹¹⁵ which was extensively amended in 1990. It provides for new attainment dates of five years after the area is designated nonattainment with extensions to ten years or longer. These dates, however, usually have little meaning because more specific dates and associated requirements are found in sections 181-192.¹¹⁶ Thus, SIP revisions must meet the requirements of Part D, subparts 2-5, as well as sections 172(c)¹¹⁷ and 110(a)(2).¹¹⁸ Section 110¹¹⁹ includes procedures for EPA review of SIP submittals,¹²⁰ action on SIP revisions¹²¹ and a revised list of requirements for all plans.¹²²

Section 172(c)¹²³ sets forth the following nine requirements for a nonattainment plan:

- (1) existing sources must implement reasonably available control measures that, at a minimum, require reasonably available control technology (RACT) to provide for attainment of NAAQS;
- (2) the plan shall require reasonable further progress (RFP) (defined at section 171(1));¹²⁴
- (3) all sources shall submit a comprehensive, accurate, current inventory of actual emissions;

113. See 42 U.S.C. § 7511(a) (2000). The primary requirement is inspection and maintenance. See generally *Federalism*, *supra* note 94.

114. See *infra* § 4 (explaining that transportation sources are also subject to SIPs).

115. See 42 U.S.C. § 7502 (2000) (setting forth basic program for nonattainment areas).

116. See *id.* at §§ 7511-7514(a) (providing additional provisions for ozone, carbon dioxide, sulfur oxides, nitrogen dioxide and lead nonattainment areas).

117. See *id.* at § 7502(c) (noting nonattainment plan provisions).

118. See *id.* at § 7410(a)(2) (noting implementation plan requirements).

119. *Id.* at § 7410 (including procedures for EPA review of SIP submittals).

120. See Clean Air Act § 110(k), 42 U.S.C. § 7410(k) (2000) (outlining EPA action on plan submission).

121. See *id.* at § 110(1) (providing guidelines on SIP revisions).

122. See *id.* at § 110(a)(2) (noting SIP requirements).

123. 42 U.S.C. § 7502(c) (2000) (setting forth requirements for nonattainment plans).

124. *Id.* at § 7501(1).

- (4) emissions to be allowed from major new or modified stationary sources must be quantified and not interfere with attainment of the NAAQS and be consistent with RFP requirements;
- (5) new or modified major stationary sources must have a permit to construct and a permit to operate;¹²⁵
- (6) the plan must have enforceable emission limitations and other control measures, including economic incentives as are necessary to provide for attainment;
- (7) the plan must meet all requirements of section 110(a)(2);¹²⁶
- (8) EPA may allow states to use modeling, emission inventory techniques and planning procedures it determines are equivalent to EPA-approved measures; and
- (9) the plan must include contingent measures to take effect without further action if the state fails to make RFP or attain the NAAQS.

The 1990 CAA Amendments required states, after reclassifying areas based on the type and degree of air pollution pursuant to CAA section 107,¹²⁷ to submit revised SIPs to meet the requirements imposed by the Amendments.¹²⁸ The SIPs must incorporate measures to achieve primary health-based standards within three to twenty years, depending on the severity of pollution and the criteria pollutant involved.¹²⁹ The revised SIPs must provide a construction permit program for new major sources and major modifications of existing sources.¹³⁰ Existing, modified and new sources that are major sources are required to obtain an operating permit. The state may also require smaller sources to obtain an operating permit.¹³¹

125. Clean Air Act § 173, 42 U.S.C. § 7503 (2000) (imposing permit requirements for new or modified major stationary sources).

126. *Id.* at § 7410(a)(2) (2000) (outlining SIP requirements).

127. *See id.* at § 7407 (reclassifying AQCRs based on type and degree of air pollution).

128. *See* Clean Air Act § 175A, 42 U.S.C. § 7505a (2000). If the AQCR attains the primary ambient air quality standard and seeks redesignation under § 107(d), it must also revise the SIP to provide a maintenance plan for at least ten years to assure the NAAQS continues to be met. *Id.*

129. *See* State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 13,498 (proposed Apr. 16, 1992) (codified at 40 C.F.R. pt. 52) (stating that measures were necessary to achieve primary health based standards).

130. *See* Clean Air Act §§ 165(a), 172(c)(5), 42 U.S.C. §§ 7475(a), 7502(c)(5) (2000) (requiring permits for certain sources).

131. *See id.* at § 7661(a) (requiring all major sources to obtain permit).

The pre-1977 CAA could be interpreted to bar new sources in nonattainment areas. Thus, in 1976, EPA proposed an offset program that permits the reduction of existing emissions to counteract new ones. In 1977, the offset program was modified and enacted as sections 172(b)(6)¹³² and 173(1)(A).¹³³ The program provided that for a new source to be granted a permit to build in a nonattainment area, total emissions of a pollutant from the new source and existing sources must be “sufficiently less” than existing-source emissions of the same pollutant to assure “reasonable further progress.” The appropriate geographical area used for offsets, however, was sometimes controversial.

In *Citizens Against the Refinery's Effects, Inc. v. EPA*,¹³⁴ the issue was the permissible size of the region used to obtain offsets for the new source. EPA had approved a SIP revision in which the added hydrocarbons from a new refinery would be offset by reducing use of hydrocarbon-emitting asphalt in three highway districts covering one-third of a state. The court upheld the use of the large offset area, determining that Congress intended that EPA and states have flexibility in designing SIPs. The court also found that even though a reduction in the use of the polluting asphalt might have occurred anyway, for reasons independent of offsets, the reduction could nevertheless be used as a formal offset. The court's holding was subsequently affected when the 1990 Amendments placed limits on the use of offsets by requiring the offsets to come from the same area or an equally polluted upwind area.¹³⁵

§ 2(a). Steps To Develop A SIP

According the CAA, the steps to develop a SIP are as follows:

- (1) CAA section 108 — List Regulated Air Pollutants
EPA lists air pollutants to be regulated and twelve months later, EPA simultaneously issues a “Criteria Document” and a “Control Techniques Document” for each pollutant.
- (2) CAA section 109 — Issue Air Quality Standards
EPA issues numerical standards, based on documents developed under section 108. These stan-

132. *See id.* at § 7502(b)(6) (setting forth permit program offset provisions).

133. *See id.* at § 7503(1)(A).

134. 643 F.2d 183 (4th Cir. 1981).

135. *See* Clean Air Act § 173(c), 42 U.S.C. § 7503 (2000) (reducing area available for offsets). There is a special provision for emissions from rocket engines and motors. *See id.* at § 7503(e).

dards are the national ambient air quality standards (NAAQS). The "Primary Standard" is health based, and provides an adequate margin of safety; no economic test is required in setting a primary standard. "Secondary Standards," theoretically, are more stringent and are designed to protect the public welfare. NAAQS are found at 40 C.F.R. pt. 50, tbl. A. Under CAA sections 309 and 109(d), EPA is required to review primary and secondary standards every five years.

(3) CAA section 107 — Designate AQCRs

Air Quality Control Regions (AQCRs) are the basic jurisdiction for air quality management. They are often metropolitan areas, but the entire nation—even clean rural areas—is in an AQCR. AQCRs are divided into compliance and nonattainment areas for each criteria pollutant. Nonattainment areas for some criteria pollutants are further classified according to the severity of pollution.

(4) CAA section 110 — Adoption and Submission of the SIP to EPA for Approval

After EPA promulgates a NAAQS, each state must develop and adopt a SIP that applies to each AQCR in the state and submit it to EPA for approval. Each time a NAAQS changes, the SIP must be revised. Legislative or regulatory changes in statutory requirements also may require SIP revisions. After EPA approves the SIP, a state must implement the SIP and bring its AQCRs into compliance. If EPA does not approve, the SIP must be returned to the state for changes. If the state does not prepare an adequate SIP, EPA must prepare a Federal Implementation Plan (FIP), discussed *infra* in section 3-2(d). EPA also can impose sanctions as discussed *infra* in section 3-6.

(5) CAA sections 160-169 — Attainment Area Requirements

Subchapter I, subpart C imposes additional requirements in areas that meet the NAAQS. These are known as prevention of significant deterioration (PSD) areas. States must address these requirements in their SIPs. The requirements imposed in

PSD areas are less stringent than those imposed in nonattainment areas.

(6) CAA sections 171-193 — Nonattainment Area Requirements

Subchapter I, subpart D imposes additional requirements on areas that fail to meet the NAAQS (nonattainment areas (N/A)). States must address these requirements in their SIPs.

(7) CAA section 175A — Maintenance Plans

This section imposes SIP revision requirements to include maintenance plans for nonattainment areas that seek redesignation to attainment status.

§ 2(b). State Implementation Plans, CAA Section 110

The basic requirements for the SIP are set forth in CAA section 110(a)(2)(A)-(M).¹³⁶ The SIP must be approved by EPA as provided in section 110(k). If a state wishes to revise its SIP, EPA approval is required as specified in section 110(l). EPA can require revision of inadequate SIPs under section 110(k)(5).

Section 110(a)(2) requires a SIP to conform to the following:

- (A) enforceable emission limitations and other control measures including economic incentives;
- (B) an appropriate monitoring and data analyzing program that provides data to EPA;
- (C) an enforcement program;
- (D) adequate provisions to prevent interstate and international air pollution;
- (E) adequate personnel, funding and authority under state law to carry out the implementation plan;
- (F) to the extent prescribed by EPA, provisions requiring statutory sources to monitor, report and make emissions data available to the public;
- (G) authority to provide emergency response;
- (H) procedures for revision of the SIP if it is necessary in order to meet NAAQS or additional requirements established under the CAA;
- (I) provisions to meet the additional requirements of CAA Title I Part D in a plan for nonattainment areas;

136. See *id.* at § 7410(a)(2)(A)-(M). These provisions were amended in the 1990 Clean Air Act Amendments.

- (J) provisions to meet the requirements of: section 121 concerning consultation, section 127 relating to public notification, and CAA Title I Part C relating to prevention of significant deterioration of air quality and visibility protection;
- (K) provisions for the performance of such air quality modeling as EPA may prescribe and for the submission of such data to EPA;
- (L) requirements for the owner of each major stationary source to pay a fee sufficient to cover the costs of running and enforcing a permit program; and
- (M) provisions for the consultation and participation by local political subdivisions affected by the plan.

Today most SIP changes are revisions to long-existing SIPs. Whenever the Administrator finds that a SIP is inadequate, he must require the state to revise the plan to correct its inadequacies.¹³⁷ The Administrator shall not approve a revision if the revision would interfere with any applicable SIP requirement concerning attainment and the need for reasonable further progress (RFP).¹³⁸ When a prior determination has been made that emissions reductions were adequate to meet attainment requirements, EPA is not required to revisit its underlying analysis if it approves equally stringent revisions.¹³⁹ EPA, however, cannot approve a revision merely because it does not relax an existing SIP. The Agency must be able to determine that a revised plan can meet the Act's requirements. The U.S. Court of Appeals for the Ninth Circuit said "EPA must determine the extent of pollution reductions that are required and determine whether the emissions reductions effected by the proposed revisions will be adequate to the task."¹⁴⁰ Revisions require an EPA review that includes a public hearing.¹⁴¹ They are not part of the SIP until approved by the Administrator.¹⁴²

137. See *id.* at § 7410(k)(5) (noting that EPA may require state to revise SIP if "substantially inadequate").

138. See *id.* at § 7410(l) (discussing SIP revisions).

139. See *United States Steel Corp. v. EPA*, 633 F.2d 671, 674 (3d Cir. 1980).

140. *Hall v. EPA*, 273 F.3d 1146, 1159 (9th Cir. 2001).

141. See *Requirements for Preparation, Adoption, and Submittal of Implementation Plans*, 40 C.F.R. § 51.104 (2003).

142. See *id.* at § 51.105 (2003).

§ 2(c). Compliance With Annual And Short-Term Air Quality Standards

In *Ober v. EPA*,¹⁴³ the Ninth Circuit addressed the issue of whether the Clean Air Act requires a separate demonstration of attainment or the impracticability of attainment for the annual standard and the 24-hour standard. EPA promulgated two separate NAAQS for PM₁₀, — the annual standard and the 24-hour standard. The 24-hour standard offers protection against dangerous short-term exposures to high PM₁₀ levels; the annual standard provides protection against chronic degradation in lung function. Violations of the 24-hour standard generally are caused by localized sources such as construction projects, while violations of the annual standard tend to be caused by more diverse, dispersed sources. Control measures differ in effectiveness for the 24-hour standard and the annual standard.

The CAA designates an area as an attainment or a nonattainment area for each criteria pollutant, not for the individual 24-hour or annual air quality standard. EPA interprets the CAA as requiring nonattainment designation unless an area can attain both the 24-hour and the annual standard for PM₁₀ by the statutory deadline, then it will be reclassified as a “serious” nonattainment area. The Ninth Circuit upheld this interpretation. Phoenix’s inability to attain the annual PM₁₀ standard, however, did not relieve Arizona’s duty to independently examine and implement “reasonably available control measures” targeting the 24-hour standard, to independently demonstrate attainment of or the impracticability of attainment of the 24-hour standard, and to independently demonstrate “reasonable further progress” for that standard.

States must model short-term (daily) and long-term (annual) air quality for PM₁₀ to assure that both standards will be protected, even if air quality measurements show exceedances for only one time period. It is important to conduct modeling for both standards to ensure that both will be protected. The development of independent data for the 24-hour standard is necessary to determine whether attainment of the 24-hour standard is practicable by the statutory deadline or, alternatively, to help achieve attainment as expeditiously as practicable. The state is not relieved of this burden because it could analyze the annual standard using “existing emission inventory and receptor modeling data.” States must meet the “reasonable further progress” requirements for the 24-hour standard and for the annual standard.

143. 84 F.3d 304 (9th Cir. 1996).

The court concluded that because there are two separate NAAQS for PM₁₀, the CAA requires the SIP to address each of them. EPA's approval of the SIP failed to independently address the 24-hour standard. The court remanded the case for EPA to require the state to submit an independent demonstration of: (1) the implementation of all "reasonably available control measures" targeting attainment of the 24-hour standard; (2) attainment of or the impracticability of attainment of the 24-hour PM₁₀ standard; and (3) "reasonable further progress" for that standard.

§ 2(d). Federal Implementation Plans

Since 1970, the CAA has mandated that EPA's Administrator promulgate a federal implementation plan (FIP) if a state fails to submit a SIP or submits an inadequate SIP and fails to revise it after EPA's notification of rejection.¹⁴⁴ The CAA Amendments of 1990 continue the FIP provision, but allow the Administrator up to two years to promulgate a FIP after a finding a SIP was not submitted or is deficient.¹⁴⁵ EPA usually tries to avoid exercising this authority because the agency has neither the money nor the staff to adequately develop a FIP for a major AQCR, and it is not experienced in dealing with local conditions. Moreover, EPA seeks to avoid becoming involved in the politics of states' rights.¹⁴⁶ Usually, it issues a FIP only after a court orders such action.¹⁴⁷ For example, after twenty-five years of failing to prepare an approvable SIP, the South Coast of California was still not subjected to a FIP.¹⁴⁸ After the passage of the 1990 CAA Amendments, EPA attempted to approve a SIP in place of a FIP that had been promulgated pursuant to a court order, but the Ninth Circuit held that EPA could not do this.¹⁴⁹ If EPA does promulgate a FIP, it can expect protracted liti-

144. See Clean Air Act § 110(c), 84 Stat. at 1680-82 (1970); see *Sierra Club v. Indiana-Kentucky Elec. Corp.*, 716 F.2d 1145 (7th Cir. 1983) (detailing legislative history of FIP requirement).

145. See Clean Air Act § 110(c)(1), 42 U.S.C. § 7410(c)(1) (2000) (discussing when EPA may promulgate federal implementation program).

146. See *Federalism*, *supra* note 94.

147. See *Delaney v. EPA*, 898 F.2d 687 (9th Cir. 1990) (stating that EPA usually only issues FIP upon court order).

148. See Alan C. Waltner, *Paradise Delayed—The Continuing Saga of the Los Angeles Basin Federal Clean Air Implementation Plan*, 14 UCLA J. ENVTL. L. & POL'Y 247, 273 (1995-96) (explaining that EPA still did not issue FIP after 25 years of unapproved SIPs).

149. See *Disimone v. Browner*, 121 F.3d 1262 (9th Cir. 1997) (holding that EPA cannot approve SIP in place of court ordered FIP).

gation before the FIP can be implemented.¹⁵⁰ Moreover, if EPA succeeds, its efforts may be nullified by federal legislation.¹⁵¹ Thus, FIPs have not played a major role in air quality planning.

§ 2(e). Tribal Implementation Plans

There are approximately 281 Indian reservations¹⁵² covering over fifty-six million acres in the United States.¹⁵³ Although the 1977 CAA Amendments authorized tribes to redesignate their reservations for PSD air quality purposes,¹⁵⁴ it was not until 1990 that Congress granted an express delegation of power to Indian tribes to administer and enforce the CAA in Indian lands.¹⁵⁵ On October 30, 2001, the U.S. Court of Appeals for the D.C. Circuit defined Indian lands as land that has validly been set apart for the use of Indians under the superintendence of the Government.¹⁵⁶ If there is a question as to whether an Indian tribe has jurisdiction, EPA must make a decision after notice and the opportunity for public comment.¹⁵⁷ The 1990 CAA Amendments aim to ensure that Indian tribes are able to participate more fully in CAA programs and they provide the same opportunities for planning, implementing and enforcing that Indian tribes have under the Clean Water Act (CWA).¹⁵⁸ CAA section 302(b)(5) includes an Indian tribal agency

150. See e.g., *Coalition for Clean Air v. EPA*, 762 F. Supp. 1399, 1403 (C.D. Cal. 1991) (stating that protracted litigation can be expected before FIP is promulgated).

151. See Emergency Supplemental Appropriations and Recissions for the Department of Defense to Reserve and Enhance Military Readiness Act of 1995, Pub. L. No. 104-6, 109 Stat. 73. On April 10, 1995, Congress rescinded a pending FIP in the Defense Supplemental Appropriation. *Id.* EPA subsequently issued a notice of rescission. Congressional Action Rescinding California Federal Implementation Plans; Cancellation of Public Hearing, 60 Fed. Reg. 43,468 (Aug. 21, 1995).

152. The term "Indian reservation" as used in this text includes "tribal lands" and "Indian country." For an explanation of the differences, see Julie M. Reding, Comment, *Controlling Blue Skies in Indian Country: Who is the Air Quality Posse - Tribes or States? The Applicability of the Clean Air Act in Indian Country and on Oklahoma Tribal Lands*, 18 AM. INDIAN. L. REV. 161, 184, nn.174-76 (1993).

153. See *id.* at 161.

154. See Clean Air Act § 164(c), 42 U.S.C. § 7474(c) (2000). Subsection (e) provides for dispute resolution when either a state or Indian tribe redesignates an area or allows construction in an area that will affect the other party. See *id.* at § 7474(e).

155. See Reding, *supra* note 152, at 162.

156. See *Michigan v. EPA*, 268 F.3d 1075 (D.C. Cir. 2001) (defining Indian lands).

157. See *id.* at 1088 (addressing requirements for jurisdiction).

158. See Federal Water Pollution Control Act, 33 U.S.C. §§ 1251-1387 (outlining aims of CAA amendments regarding Indian policy); see also Reding, *supra* note 152, at 166-67 (discussing applicability of CAA to Indian policy).

in its definition of an “air pollution control agency.”¹⁵⁹ A definition of an Indian tribe also was added by the 1990 Amendments,¹⁶⁰ and EPA was authorized to treat Indian tribes as states (TAS) for CAA purposes.¹⁶¹ The statute gave EPA until May 15, 1992 to promulgate regulations specifying the provisions of the CAA for which it is appropriate to treat Indian TAS.¹⁶² The statute also specified the conditions under which TAS status may be granted.¹⁶³ The TAS tribes may then develop a tribal implementation plan (TIP) subject to EPA’s approval.¹⁶⁴ In addition, the Administrator “may promulgate regulations which establish the elements of tribal implementation plans and procedures for approval or disapproval of tribal implementation plans and portions thereof.”¹⁶⁵ A proposed rule was issued on August 25, 1994,¹⁶⁶ and the final rule was issued February 12, 1998.¹⁶⁷

Final regulations for operating permits for major sources located on Indian reservations were promulgated on February 19, 1999.¹⁶⁸ The regulations also apply to solid waste incineration units and to specified sources that are subject to EPA’s Acid Rain Program.¹⁶⁹ They apply to all land within the limits of any Indian reservation, all dependent Indian communities and all Indian allotments to which Indian title has not been extinguished.¹⁷⁰ Eligi-

159. See 42 U.S.C. § 7602(b)(5) (2000).

160. See Clean Air Act § 302(r), 42 U.S.C. § 7602(r) (2000) (defining Indian tribe).

161. See *id.* at § 301(d) (listing requirements necessary to establish tribal authority).

162. See *id.* at § 301(d)(2) (establishing time limitation for establishing regulations).

163. See *id.* (describing when grant of TAS status is appropriate).

164. See *id.* at § 301(d)(3) (requiring TAS tribes to subject their TIP plans for EPA approval).

165. See Clean Air Act § 301(d)(3), 42 U.S.C. § 7601(d)(3) (2000) (quoting requirements of administrators in implementing plans).

166. See Indian Tribes: Air Quality Planning and Management, 59 Fed. Reg. 43,956 (Aug. 25, 1994) (setting forth proposed rule).

167. See Indian Tribes: Air Quality Planning and Management, 63 Fed. Reg. 7254 (Feb. 12, 1998) (codified at 40 C.F.R. pts. 9, 35, 50, 81) (setting forth final rule).

168. Federal Operating Permits Program, 64 Fed. Reg. 8247 (Feb. 19, 1999) (codified at 40 C.F.R. pt. 71); see generally William H. Gelles, *Tribal Regulatory Authority Under the Clean Air Act*, 3 ENVTL. LAW. 363 (1997) (discussing final regulations).

169. Federal Operating Permits Program, 64 Fed. Reg. at 8247 (setting forth regulations applicable to units and sources under EPA’s Acid Rain Program).

170. Federal Operating Permit Programs, 40 C.F.R. § 71.1 (2003) (defining eligible Indian tribes).

ble Indian tribes also are treated as states under the operating permit program.¹⁷¹

To achieve TAS status under the CAA, Indian tribes must meet the following requirements before they are allowed to administer the CAA.¹⁷² First, the Indian tribe must have a governing body that has substantial governmental duties and powers.¹⁷³ Second, the functions to be exercised by the Indian tribe must pertain to air resource management and protection within the exterior boundaries of the reservation.¹⁷⁴ Third, the Indian tribe must be "reasonably capable" of performing the duties and functions associated with the CAA.¹⁷⁵ The term "capable" has both economic and technical ability requirements.¹⁷⁶ There are problems in getting Indian tribes to take action to implement the CAA. In March of 2002, only one tribe in Idaho, Oregon and Washington had EPA approval to run an air program. On March 15, 2002, EPA proposed a FIP for thirty-nine tribes in these three states.¹⁷⁷ As of mid-2003, EPA has not published a final rulemaking for the Indian Reservation FIPs under the CAA.

Controversy concerning Indian tribes' administration of the CAA arises due to the Indian tribes' limited jurisdiction over non-tribal members on Indian lands and the potential transboundary problems from inconsistent standards and enforcement activities among the Indian tribes and the state.¹⁷⁸ In 1981, the United States Supreme Court in *Montana v. United States* held that, absent delegation by federal statute or treaty, Indian tribes generally lack

171. *Id.* (defining status of Indian tribes).

172. *See* Clean Water Act § 302(r), 42 U.S.C. § 7602(r) (2000). CAA defines an Indian tribe as any "Indian tribe, band, nation, or other organized group or community, including any Alaska Native village, which is Federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians." *Id.* (emphasis added).

173. *See id.* at § 301(d)(2)(A) (requiring tribe to have governing body that makes practical decisions to achieve TAS status).

174. *See id.* at § 301(d)(2)(B) (describing tribe's functions to classify them as states).

175. *See id.* at § 301(d)(2)(C) (requiring capability to implement programs).

176. *See* Reding, *supra* note 152, at 168 (discussing capability under CAA).

177. *See EPA Proposes Federal Implementation Plans For Tribe Lands in Idaho, Oregon, Washington*, 33 Env't Rep. (BNA) 625 (Mar. 22, 2002) (citing Federal Implementation Plans Under the Clean Air Act for Indian Reservations in Idaho, Oregon and Washington, 67 Fed. Reg. 11,748 (proposed Mar. 15, 2002) (codified at 40 C.F.R. pt. 49)).

178. *See generally* Reding, *supra* note 152, at 175-77 (citing controversies arising out of tribal administration of CAA).

the authority to regulate nontribal members.¹⁷⁹ Empowering Indian tribes with the ability to conduct their own air programs can impact emission sources in and near the Indian lands. Such empowerment results in additional regulations for an existing or potential emission source to deal with because it creates another regulatory entity.¹⁸⁰

On October 7, 1996, the U.S. Court of Appeals for the Tenth Circuit decided *Albuquerque v. Browner*.¹⁸¹ The City of Albuquerque filed a complaint challenging EPA's approval of the Pueblo of Isleta's water quality standards. The district court granted summary judgment to EPA, and Albuquerque appealed. This case was the first challenge to water quality standards adopted by an Indian tribe under the 1987 Amendments to the CWA that allow Indian tribes to be treated as states.¹⁸² The Isleta Pueblo adopted water quality standards more stringent than New Mexico's standards that EPA subsequently approved. This affected Albuquerque's waste treatment facility because the city was required to revise its NPDES discharge permit to meet the downstream Isleta's water quality standards.¹⁸³ The issue before the court was whether Isleta's standards could be applied by EPA to an upstream permit holder.¹⁸⁴ The Tenth Circuit held that Indian tribes may establish water quality standards more stringent than those imposed by the federal government.¹⁸⁵ Moreover, the United States Supreme Court has held that EPA has the authority to require upstream NPDES discharges to comply with downstream state water quality standards.¹⁸⁶ The Tenth Circuit also cited the Supreme Court's opinion in *Montana v.*

179. 450 U.S. 544 (1981) (recognizing two exceptions to general rule). A tribe may regulate nontribal members who have commercial consensual relationships with the tribe or its members and it may regulate nonmembers land "when that conduct threatens or has some direct effect on the political integrity, the economic security or the health or welfare of the tribe." *Id.*

180. See *New EPA Rule Would Set Up Indian Tribal Implementation Plans*, III Clean Air Rep., Inside EPA, Aug. 12, 1993, at 17:14 (imposing additional regulations under CAA).

181. 97 F.3d 415 (10th Cir. 1996) (challenging EPA approval of tribal water quality standards).

182. See *id.* at 418-19 (stating facts of case); see also Clean Water Act, Pub. L. No. 100-4, tit. V, § 5-6, 101 Stat. 76 (1987) (codified at Clean Water Act § 518(e), 33 U.S.C. § 1377(c) (2000)).

183. See *Albuquerque*, 97 F.3d at 418-19 (discussing tribe's stringent regulations). National Pollution Discharge Elimination System (NPDES) permits are issued under Clean Water Act § 402, 33 U.S.C. § 1342 (2000). *Id.* at 419.

184. See *id.* at 420 (stating issue of case).

185. See *id.* at 423 (allowing Indian tribes to impose stricter regulations than EPA).

186. See *id.* at 424 (citing *Arkansas v. Oklahoma*, 503 U.S. 102, 107 (1992)).

United States, holding that Indian tribes have jurisdiction over non-Indian conduct or non-Indian resources if there is "some direct effect on the political integrity, the economic security, or the health or welfare of the tribe."¹⁸⁷ The Tenth Circuit affirmed the granting of summary judgment to EPA.¹⁸⁸

On March 3, 1998, the Ninth Circuit decided a similar issue involving the CWA in *Montana v. EPA*.¹⁸⁹ In this case, the plaintiffs, collectively referred to as "Montana," were state and municipal entities owning land within the boundaries of the Flathead Indian Reservation. The Confederated Salish and Kootenai Tribes established water quality standards pursuant to the CWA.¹⁹⁰ Montana attacked EPA's decision to grant TAS status to regulate all sources of pollutant emissions within the boundaries of the Reservation, regardless of whether the sources are on land owned by members or non-members of the Tribe. The federal district court granted summary judgment to the defendants, and the Ninth Circuit Court of Appeals affirmed.¹⁹¹ The Ninth Circuit supported EPA's TAS Final Rule,¹⁹² which allows control of the activities of non-members on non-Indian fee lands if the regulated activity affects "the political integrity, the economic security, or the health or welfare of the tribe."¹⁹³ The potential impacts of the activities on the tribe must be "serious and substantial to allow tribes to regulate non-members."¹⁹⁴

On May 5, 2000, the U.S. Court of Appeals for the D.C. Circuit in *Arizona Public Service Company v. EPA*¹⁹⁵ ruled on the applicability of the CAA to privately-owned land within an Indian reservation.

187. 450 U.S. 544, 566 (1981) (examining jurisdiction over non-Indian conduct and resources). This topic is explored in Gelles, *supra* note 168.

188. See *Albuquerque*, 97 F.3d at 418 (reciting procedural history).

189. 137 F.3d 1135 (9th Cir. 1998) (analyzing situation when state and municipal entities own land in Indian reservation).

190. Clean Air Act § 518(e), 33 U.S.C. 1377(e) (treating Indian tribes as states).

191. See *Montana*, 137 F.3d at 1142 (citing Montana's arguments regarding EPA approval of tribal WQS).

192. See Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876 (Dec. 12, 1991) (codified at 40 C.F.R. pt 131.8(b)(3)).

193. *Id.* at 64,877 (allowing jurisdiction over nonmembers in specific cases); but see *Bugenig v. Hoops Valley Tribe*, 293 F.3d 1210 (9th Cir. 2000) (holding standard has not been met).

194. See 56 Fed. Reg. at 64,878 (defining significant terms allowing regulation of nonmembers).

195. 211 F.3d 1280 (D.C. Cir. 2000) (giving facts of case).

The court held that the term “reservation used in the CAA¹⁹⁶ includes “allotted land,” which is land owned by individual Indians and is either held in trust by the United States or is subject to statutory restrictions on alienation.¹⁹⁷ It also covers “dependent Indian communities,” which are those under federal protection that did not originate in either a federal or tribal act or were not specifically designated as a reservation.¹⁹⁸ The court further held that tribal authority extends to all lands within reservations, including fee land owned by nonmembers.¹⁹⁹ The court based its decision, in part, on CAA section 110(o), which states that TIPs “shall become applicable to all areas (except as expressly provided otherwise in the plan) located within the exterior boundaries of the reservation, notwithstanding the issuance of any patent and including rights-of-way running through the reservation.”²⁰⁰ Another problem that may arise concerns what Indian lands are covered by the PSD provision in section 164 because the word “reservation” is not defined. Thus, the applicability of section 164 to lands such as tribal trust lands is not necessarily resolved by the CAA.²⁰¹ CAA section 301(d)(3)(B), however, allows tribes to exercise jurisdiction over reservation areas or “other areas within the tribe’s jurisdiction.”²⁰²

On May 29, 2001, the United States Supreme Court refined the *Montana v. United States* rule in *Atkinson Trading Co., Inc. v. Shirley*.²⁰³ In *Atkinson*, the controversy concerned an attempt by the Navajo Nation to impose a hotel occupancy tax on a non-Indian owned hotel located on fee land within the Navajo reservation. In deciding that the Navajo Nation did not have the power to tax, the Court revisited the second exception in *Montana* and held Indians may regulate nonmember conduct only when it impacts tribal services and resources so severely that it imperils the political integrity of the Indian tribe.²⁰⁴ In a subsequent case, the Supreme Court denied *certiorari* in a Seventh Circuit decision affirming EPA’s grant of

196. See Clean Air Act § 110(o), 42 U.S.C. § 7410(o) (regarding submissions of implementation plans from Indian tribe to Administrator).

197. See *Arizona Pub. Serv. Co.*, 211 F.3d at 1280 (defining “regulation” in CAA).

198. See *id.* (discussing “dependent Indian communities”).

199. See *id.* (defining boundaries of tribal authority).

200. 42 U.S.C. § 7410(o) (2000) (holding TIPs are generally applicable throughout reservation).

201. See Ann Julianio, *Redesignating Tribal Trust Land Under Section 164(c) of The Clean Air Act*, 35 TULSA L. J. 37 (1999) (highlighting tensions created under CAA).

202. See 42 U.S.C. § 7601(d)(2)(B) (2000) (allowing jurisdiction over additional areas).

203. 532 U.S. 645 (2001) (redefining rule established in *Montana v. United States*).

204. See *id.* at 658, n.12 (defining taxing power as regulation).

TAS status, although non-Indian members did not own land within the reservation.²⁰⁵

§ 2(f). Outer Continental Shelf

The 1990 CAA Amendments added section 328²⁰⁶ requiring the Administrator to regulate air pollution from Outer Continental Shelf (OCS) sources. The Amendments also transferred authority to regulate sources located on part of the OCS to EPA from the Department of the Interior (DOI). DOI, however, kept the authority to regulate OCS sources in the Gulf of Mexico west of 87.5 degrees longitude. For the remainder of the OCS in the Gulf of Mexico (east of 87.5 degrees) and in the Atlantic, Pacific and Arctic Oceans, section 328 requires EPA to establish air pollution control requirements.²⁰⁷ The effect of this rule is to exempt petroleum industry activities in the Gulf from CAA requirements.

The OCS regulations²⁰⁸ were interpreted in *Santa Barbara County Air Pollution Control District v. EPA*.²⁰⁹ Santa Barbara contended that the final rule was not consistent with section 328 because it failed to include marine vessels in transit among OCS sources, and it did not treat OCS sources in a manner corresponding to the treatment given to onshore sources. EPA defined OCS sources to include vessels only when they are permanently or temporarily attached to the seabed or physically attached to an OCS facility. The court upheld EPA, finding it reasonable for the agency to conclude OCS sources did not include vessels that merely were traveling over the OCS. Vessels, however, are subject to OCS regulations if they are attached to the seabed or to an OCS facility.²¹⁰

EPA requires sources located twenty-five miles or more beyond states' seaward boundaries to meet CAA requirements, including PSD, NSPS and section 112 regulations, as well as operating permit regulations and enhanced monitoring regulations.²¹¹ States may be delegated authority to implement and enforce the CAA within the twenty-five mile limit.²¹² Initially, EPA did not provide for delegat-

205. See *Wisconsin v. EPA*, 266 F.3d 741 (2001), cert. denied, 122 S. Ct. 2347 (2002) (showing power of EPA to grant TAS status).

206. 42 U.S.C. § 7627 (2000) (setting forth "applicable requirements for certain areas").

207. See *id.* at § 7627 (2000); see also Outer Continental Shelf Air Regulations, 40 C.F.R. § 55.3 (2003) (requiring EPA to set requirements).

208. 40 C.F.R. at § 55 (2003) (explaining OCS regulations).

209. 31 F.3d 1179 (D.C. Cir. 1994).

210. See 40 C.F.R. at § 55.2 (2003).

211. See *id.* at § 55.14.

212. See *id.* at § 55.11 (discussing procedural history).

ing implementation and enforcement authority for sources beyond the twenty-five mile limit. During the *Santa Barbara County* case, however, the court granted EPA's request to remand this issue for reconsideration.²¹³

On May 20, 1996, EPA published a proposed rule to provide for delegation to state and local agencies of the authority to implement and enforce OCS regulations beyond the twenty-five mile limit.²¹⁴ On September 2, 1997, EPA published a final rule in response to the *Santa Barbara County* case.²¹⁵ The requirements applying to OCS sources located within twenty-five miles of states' seaward boundaries are required to be updated so that they remain consistent with the requirements that are applicable to sources located onshore.²¹⁶

On September 2, 1997, EPA promulgated a final rule revising the OCS air regulations in response to the remand from the U.S. Court of Appeals for the D.C. Circuit in the *Santa Barbara* case.²¹⁷ The action adopted the proposed rule as a final regulation, but delegating of the program to any specific state or local agency requires separate subsequent action.²¹⁸

§ 2(g). Determining The SIP Requirements Applicable To A Specific Pollution Source

The pre-1990 CAA in section 110(h)(1) required EPA Administrator to publish a comprehensive document for each state setting forth all applicable SIP requirements for each state and publish a notice of the availability of such documents in the Federal Register. This requirement was to be met by August 7, 1978, and annually thereafter. The regions, however, did not comply.²¹⁹ The 1990

213. See *Santa Barbara County Air Pollution Control Dist.*, 31 F.3d at 1182 (reviewing delegation authority of EPA).

214. Outer Continental Shelf Air Regulations Delegation Remand, 61 Fed. Reg. 25,173 (May 20, 1996) (codified at 40 C.F.R. pt. 55) (advocating extension of state and local authority to implement and enforce OCS regulations).

215. See Outer Continental Shelf Air Regulations Remands, 62 Fed. Reg. 46,409 (Sept. 2, 1997) (codified at 40 C.F.R. pt. 55) (articulating final rule).

216. See Outer Continental Shelf Air Regulations Consistency Update for California, 62 Fed. Reg. 45,604 (proposed Aug. 28, 1997) (codified at 40 C.F.R. pt. 55) (showing example of updating process).

217. See Outer Continental Shelf Air Regulations Remands, 62 Fed. Reg. 46,406 (Sept. 2, 1997) (codified at 40 C.F.R. pt. 55) (setting forth final rule).

218. See *id.*; see also C.F.R. at § 55.11 (2003) (stating rule for delegation); 40 C.F.R. at § 55, appendix A (2002) (listing of state and local requirement incorporated by reference).

219. See *Permit Program and Enforcement Tool Changing Face of Pollution Control*, Daily Envtl. Rep. (BNA) Sept. 9, 1994, at A-4, 5 (highlighting state inability to meet CAA requirements).

CAA Amendments changed this requirement to require this comprehensive document by November 15, 1995, and every three years thereafter.²²⁰ EPA did not comply with this statutory mandate.²²¹ A California environmental group, Our Children's Earth Foundation, sued EPA which proposed a consent decree on April 17, 2003.²²² EPA said it would publish summaries of all approved state clean air plans and all approved state air quality rules on the World Wide Web.²²³ EPA began publishing SIP summaries for Region IX in 2001. Now the program is to be expanded.²²⁴ Until SIP information is readily available on the internet, the following steps will help to identify the requirements applicable to a specific source:

- (1) Determine the state, the AQCR and area status for the location of the source. The geographical coverage of each AQCR is found in 40 C.F.R. pt. 81, subpt. B. Each state's attainment or nonattainment status for each criteria pollutant is found in 40 C.F.R. pt. 81, subpt. C.
- (2) Determine the types and maximum amounts of pollution the source is potentially able to emit considering the pollution controls that will be utilized. This includes all criteria pollutants; hydrocarbons; the approximately 189 toxic air pollutants; any pollutants regulated by New Source Performance Standards; and any other pollutants, including those causing odors, which may be regulated by state or local law.
- (3) Determine the industrial subcategory [Standard Industrial Classification Code (SIC)] that is applicable to the facility. There may be more than one.²²⁵

220. See Clean Air Act § 110(h)(1), 42 U.S.C. § 7410(h)(1) (2000).

221. See Availability of Federally-Enforcable State Implementation Plans for all States, 63 Fed. Reg. 63,986 (Nov. 18, 1998) (codified at 40 C.F.R. pt. 52); see also Rules and Policies Concerning Multiple Ownership of Radio Broadcast Stations in Local Markets, and Definition of Radio Markets, 66 Fed. Reg. 58,070 (Nov. 20, 2001) (codified at 40 C.F.R. pt. 73) (noting EPA's failure to comply with federal CAA amendments).

222. *Our Children's Earth Foundation v. EPA*, N.D. Cal., No. CO3-1705 (Apr. 17, 2003) (citing EPA's failure to follow CAA guidelines).

223. See EPA Agrees to Electronically Publish State Clean Air Plan Summaries, Rules, 34 Env't Rep. (BNA) 1047 (May 9, 2003); see also *Court Pact To Publish State Air Rules May Lead To More Citizen suits*, XX Env't. Pol'y Alert, Inside EPA, May 14, 2003, at 10:17 (discussing publishing of summaries).

224. See Agency Information Collection Activities; Submission of EPA ICR No. 0794.10 to OMB for Review and Approval; Comment Request, 68 Fed. Reg. 23,455 (May 2, 2003) (detailing plans to expand SIP program).

225. See www.census.gov/eped/www/naics.htm (last visited April 15, 2004). The SIC code system was developed in 1987. On April 9, 1997, the Office of Management and Budget announced it would adopt the North American Industry

- (4) Determine if the source is a "major" source for a pollutant. The definition of major source may vary depending on the pollutant and the area's status.
- (5) Determine if the facility is or will be licensed by the state and what permit conditions are applicable.
- (6) Determine if any other state or local statutes or regulations are applicable, including those that are not referenced in the SIP or applicable permit.
- (7) Use the Federal Register to find any SIP modifications that may be applicable to the source. Much of the Federal Register material concerning SIPs is placed in 40 C.F.R. pt. 52; therefore, one can usually check the C.F.R. and then update from the date of the C.F.R. to the current date using the Federal Register. Within 40 C.F.R. pt. 52, there are 58 subparts (A through FFF). Subpart A contains general requirements applicable to the fifty states, four territories and the District of Columbia. Subparts B through DDD and FFF contain requirements specific to a given state or territory. Subpart EEE contains historical information. The actual state regulation are not reproduced in their entirety in part 52, but are incorporated by reference.²²⁶
- (8) Determine or estimate the impact of any foreseeable requirements under state or federal law that will become applicable to the source in the future due to any of the following:
 - (a) emission of hazardous air pollutants;
 - (b) New Source Performance Standards, including NSPS applicable to modifications or renovations;
 - (c) New Source Review (preconstruction reviews) applicable to new or modified major sources under the CAA's subchapter I, parts C or D;

Classification System (NAICS) as the industrial classification system to be used by the United States, Canada and Mexico. NAICS has 1,170 industries of which 565 are service-based. The SIC had 1,104 industries of which 250 were service producing. Under NAICS, a six-digit identification is used (SIC uses four digits). NAICS has a two-digit sector code followed by a third number indicating the subsector. The fourth and fifth digits identify the industry and the sixth digit identifies nationality.

226. See Approval and Promulgation of Air Quality Implementation Plans; Revised Format of 40 C.F.R. Part 52 for Materials Being Incorporated by Reference, 62 Fed. Reg. 27,968 (May 22, 1997) (codified at 40 C.F.R. pt. 52 (2003)) (incorporating by reference).

- (d) provisions applicable under subchapter IV dealing with acid deposition;
 - (e) provisions applicable to CFCs and related chemicals under subchapter VI;
 - (f) operating permit requirements under subchapter V; and
 - (g) requirements imposed to control interstate transport of pollutants.
- (9) The requirements imposed on a source range from emission limits to monitoring, record keeping, and reporting. Requirements are more likely to apply if the source is legally a "major" source. Requirements can be found in statutes, regulations and the SIP. They can be federal or state laws. Thus, there may be no way to know with certainty which laws apply to a source.

§ 3. POST-1990 SIP REVISIONS IN NONATTAINMENT AREAS

§ 3(a). Ozone

The 1990 CAA Amendments required EPA and the states to review the designation of areas and to redesignate areas as nonattainment for ozone if the air quality data from 1987, 1988 and 1989 indicated that the area was violating the ozone standard.²²⁷ On November 6, 1991, and November 30, 1992, EPA issued those designations.²²⁸

Nonattainment areas are those areas that exceed the applicable design value for a NAAQS. For ozone, the design value is the fourth-highest daily maximum ozone one-hour concentration over three consecutive years.²²⁹ If the design value exceeds 0.12 parts per million (ppm), the area is nonattainment.²³⁰ If one monitoring site within an area fails to comply with the NAAQS, the entire area

227. See *1000 Friends of Maryland v. Browner*, 265 F.3d 216 (4th Cir. 2001) (showing data used to designate areas as nonattainment areas).

228. See *Designation of Areas for Air Quality Planning Purposes*, 56 Fed. Reg. 56,694 (Nov. 6, 1991) (codified at 40 C.F.R. pt. 81); see also *Designations of Areas for Air Quality Planning Purposes; Amendments and Corrections*, 57 Fed. Reg. 56,762 (Nov. 3, 1992) (codified at 40 C.F.R. pt. 81).

229. See *Am. Petroleum Inst. v. EPA*, 198 F.3d 275, 278 (D.C. Cir. 2000); see also *Am. Trucking Ass'ns v. EPA*, 175 F.3d 1027, 1046 n. 6 (D.C. Cir. 1999); *National Primary and Secondary Ambient Air Quality Standards*, 40 C.F.R. § 50, App. H (2003) (mandating ozone requirements for nonattainment areas).

230. See *id.* at § 50.9 (2003) (outlining design values for nonattainment areas).

is designated nonattainment for that pollutant.²³¹ Section 181²³² classifies ozone nonattainment areas based on the severity of the nonattainment problem.²³³ Areas are classified as marginal, moderate, serious, severe or extreme based on their design value. For areas classified as marginal to extreme, virtually all requirements are additive (e.g., a moderate area must meet all marginal and moderate requirements, unless otherwise specified).

§ 3(a)(1). *Marginal Areas — Section 182(a)*²³⁴

Marginal Areas exceeded the ozone standard of 0.12 parts per million (ppm) by fifteen percent or less (0.121 ppm up to but not including 0.138 ppm).²³⁵ These areas were required to meet the primary NAAQS by November 15, 1993. The plan must require reasonable further progress toward meeting the NAAQS.²³⁶

§ 3(a)(1)(i). *Emission Inventory*

Section 182(a)(3)(A) requires each state to submit periodic inventories, beginning November 15, 1995, and every three years thereafter until the area is redesignated as attainment.²³⁷ The 1990 base year inventory required by the CAA²³⁸ was to be performed based on EPA's "Emission Inventory Requirements for Ozone State Implementation Plans" (March 1991)²³⁹ and the regulations promulgated on April 16 and 28, 1992.²⁴⁰ This inventory was used to

231. See *S.W. Pa. Growth Alliance v. Browner*, 121 F.3d 106 (3d Cir. 1997) (establishing limitations regarding classification of nonattainment areas).

232. 42 U.S.C. § 7511 (2000) (highlighting characteristics of ozone nonattainment areas).

233. See *id.*; see also *Designation of Areas for Air Quality Planning Purposes*, 56 Fed. Reg. 56,694 (Nov. 6, 1991) (codified at 40 C.F.R. pt. 81) (describing designation/classification process for ozone).

234. 42 U.S.C. § 7511(a) (2000).

235. See *Criteria Pollutants, Greenbook*, available at <http://www.epa.gov/ttn/chief/net/1999inventory.html#final2crit> (last visited Aug. 24, 2003) (stating that for ozone, design value is usually fourth highest daily maximum value over three year period); see also 42 U.S.C. § 7511(a) (2000) (defining marginal areas).

236. See *Clean Air Act* § 172(c)(2), 42 U.S.C. § 7502(c)(1)-(2) (2000) (stating requirements plans must comply).

237. See *id.* at § 7511a(a)(3)(A) (stating requirement applicable after original inventory).

238. See *id.* at § 7511a(a)(1), (b)(1)(B) (defining base year inventory).

239. This document may be obtained from EPA's Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina.

240. See *generally* *State Implementation Plans; General Preamble for the Implementation of the Title I of the Clean Air Act Amendments of 1990*, 57 Fed. Reg. 13,498 (Apr. 16, 1992) (codified at 40 C.F.R. pt. 52) (explaining EPA's new interpretation of CAA); *State Implementation Plans; General Preamble for the Implementation of the Title I of the Clean Air Act Amendments of 1990; Supplemental*,

determine the reasonable further progress (RFP) requirements²⁴¹ and other air quality planning requirements.²⁴² A state must meet the minimum requirements for reporting by source category to obtain EPA's approval of its emissions inventory. The base year emissions inventory is approvable if it passes Levels I, II and III of the review process.²⁴³

Levels I and II review processes are used to determine if all components of the base year inventory are present, evaluate the supporting documentation provided by the state, and assess whether the emission estimates were developed according to EPA guidance. The data quality also is evaluated.

The Level III review process consists of ten criteria. For a base year emission inventory to be acceptable, it must meet the following criteria:

- (1) an approved Inventory Preparation Plan (IPP) must be provided and the Quality Assurance (QA) program contained in the IPP must be performed and its implementation documented;
- (2) adequate documentation must be provided that enables the reviewer to determine the emission estimation procedures and the data sources used to develop the inventory;
- (3) the point source inventory must be complete;
- (4) point source emissions must be prepared or calculated according to the current EPA guidance;
- (5) the area source inventory must be complete;
- (6) the area source emissions must be prepared or calculated according to the current EPA guidance;
- (7) biogenic emissions must be prepared according to current EPA guidance or another approved technique;
- (8) the method used to develop VMT estimates must follow EPA guidance;

57 Fed. Reg. 18,070 (Apr. 28, 1992) (codified at 40 C.F.R. § 52 (2003)) (expanding on EPA's earlier interpretation of CAA).

241. See Clean Air Act § 182(b)(1), (c)(2)(B), 42 U.S.C. § 7511a(b)(c)(1), (c)(2)(B) (2000) (naming further progress requirements for moderate areas and serious areas).

242. See *e.g.*, *id.* at § 176(c)(1) (stating plans purpose to decrease violations of air quality standards).

243. See Approval and Promulgation of Air Quality Implementation Plans; District of Columbia and State of Maryland — 1990 Base Year Emission Inventory for the Metropolitan Washington, D.C. Area, 62 Fed. Reg. 19,676, 19,677 (Apr. 23, 1997) (codified at 40 C.F.R. § 52) (noting that acceptable emissions inventory must meet various tests).

- (9) the appropriate MOBILE model (or EMFAC model for California only) must be correctly used to produce emission factors for each of the vehicle classes; and
- (10) non-road mobile emissions must be prepared according to current EPA guidance for all of the source categories.²⁴⁴

Nonattainment areas were to submit a final, comprehensive, accurate and current inventory of actual ozone season, weekday emissions from all sources by November 15, 1992. Calendar year 1990 denoted the base year inventory that was to include both anthropogenic and biogenic sources of VOC, NO_x and CO for the area during the peak ozone season, which generally is the summer months. The compilation was to include all stationary point sources, area sources, highway sources and nonhighway mobile sources within the nonattainment area; stationary sources with emissions of 100 tons or greater per year within a twenty-five mile wide buffer of the designated nonattainment area; and any OCS sources.²⁴⁵

States were to develop new 1990 base year inventories for highway mobile sources to account for fleet turnover, changes in VMT and VMT patterns, and changes in speed limits. States, except California, were required to use an EPA model to determine highway mobile source emissions for their base year emission inventories. New methodologies were developed to calculate emissions from certain off-highway mobile source categories, and states were to develop new emission estimates using the new methodologies.²⁴⁶

244. *See id.* The base year emission inventory is approvable if it passes Levels I, II and III of the review process. Detailed Level I and II review procedures can be found in the document titled "Quality Review Guidelines for 1990 Base Year Emission Inventories," Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina, July 27, 1992. Level III review procedures are specified in a memorandum from David Mobley and G.T. Helms to the Regions "1990 O₃, CO SIP Emission Inventory Level III Acceptance Criteria," October 7, 1992 and revised in a memorandum from John Seitz to the Regional Air Directors dated June 24, 1993. VMT estimation procedures are found in: "Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources," Environmental Protection Agency, Office of Mobile Sources and Office of Air Quality Planning and Standards, Ann Arbor, Michigan, and Research Triangle Park, North Carolina, December 1992.

245. *See Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone*, Vol. I, (May 1991) (giving guidance for preparing emission inventories).

246. *See Procedures for the Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone*, Vol. II, (May 1991) (providing guidance which was developed to aid states in preparing emission inventories for photochemical grid modeling for serious and above areas and multi-state moderate areas); *see also UAM*

§ 3(a)(1)(ii). RACM/RACT

Section 172(c)(1), as amended in 1990, requires the use of reasonably available control measures (RACM). EPA interprets section 172(c)'s RACM provision as requiring a state to "consider all potentially available measures to determine whether they [a]re reasonably available for implementation in the area, and whether they would advance the [area's] attainment date."²⁴⁷ A state may, however, reject measures as not being RACM if "they would not advance the attainment date, would cause substantial widespread and long-term adverse impacts, or would be economically or technologically infeasible."²⁴⁸ EPA's interpretation of RACM was upheld by the D.C. Circuit in *Sierra Club v. EPA*²⁴⁹ and by the Fifth Circuit in *Sierra Club v. EPA*.²⁵⁰

Existing sources at a minimum must adopt reasonably available control technology (RACT),²⁵¹ which is a subset of RACM. The CAA does not define RACT, but EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."²⁵² The definition found at 40 C.F.R. § 51.100 provides:

Reasonably available control technology (RACT) means devices, systems process modifications, or other apparatus or techniques that are reasonably available taking into account (1) the necessity of imposing such controls in order

Applications Guidance and User's Guide for the Urban Airshed Model, Vol. 4.; *Procedures for Preparation of Emission Inventories for Carbon Monoxide and Precursors of Ozone*, Vol. I, (May 1991).

247. See Approval & Promulgation of Air Quality Implementation Plans; District of Columbia, Maryland, Virginia; Post 1996 Rate-of-Progress Plans, One-Hour Ozone Attainment Demonstrations and Attainment Date Extension for the Metropolitan Washington, D.C. Ozone-Nonattainments Area, 66 Fed. Reg. 586, 607 (Jan. 3, 2001) (codified at 42 C.F.R. pt. 52) (stating EPA's interpretation of § 172(c)(1)).

248. See *id.* at 608 (explaining when state could reject measures).

249. 294 F.3d 155, 163 (D.C. Cir. 2002) (upholding EPA's interpretation).

250. 314 F.3d 735 (5th Cir. 2002) (upholding EPA's RACM interpretation).

251. See 42 U.S.C. § 7502(c)(1) (2000) (explaining minimum control measures requirements).

252. State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas—Supplement (on Control Techniques Guidelines), 44 Fed. Reg. 53,761, 53,762 (Sept. 19, 1979) (codified at 40 C.F.R. pt. 52) (defining RACT); see also Approval and Promulgation of Revisions to the Michigan State Implementation Plan to Control Particulate Emissions from Iron and Steel Processes, 45 Fed. Reg. 59,329, 59,331 (Sept. 9, 1980) (codified at 42 C.F.R. pt. 52) (defining RACT); Approval and Promulgation of Implementation Plans; Ohio, 55 Fed. Reg. 39,270-02, 39,271 (Sept. 26, 1990) (codified at 40 C.F.R. pt. 52) (stating EPA's interpretation of RACT).

to attain and maintain a national ambient air quality standard, (2) the social, environmental and economic impact of such controls, and (3) alternative means of providing for attainment and maintenance of such standard. (This provision defines RACT only for the purposes of §§ 51.110(c)(2) and 51.341(b).)

In theory, the states should have primary authority for determining RACT as part of their development of SIPs and SIP revisions. However, EPA has a significant role through its issuance of control technique guidelines (CTGs).²⁵³ EPA publishes CTGs for industries or individual processes that identify a reasonably available control technique or a level of emission reduction that can be achieved with a control technology. These CTGs: (1) inform states what control techniques are available; (2) establish deadlines for SIP revisions for sources subject to a CTG; and (3) establish "presumptive norms" of what RACT should be for an individual source.²⁵⁴ If a state uses the CTG to establish RACT, it can expect its SIP provisions applicable to a CTG source category to be approved without any difficulties. If a state chooses to impose a requirement on a source that is less stringent than the CTG, it has the burden of satisfying EPA that the RACT requirements have been met.²⁵⁵ Furthermore, if a state takes such an approach, it can jeopardize its SIP approval.

A source subject to RACT requirements, based on a CTG that it cannot meet, faces serious obstacles in obtaining meaningful judicial review. Federal courts may not take the case on the ground that challenges should be directed to state courts based on state law.²⁵⁶ State courts may not provide relief because imposing controls that cannot be met may not be a judicially recognized wrong. A source's best approach is to participate actively in both the CTG development and the SIP revision process. A state's path of least resistance is to adopt the CTG; therefore, it ultimately is the

253. See Clean Air Act § 183(b), 42 U.S.C. § 7511b(b) (2000) (stating EPA's power concerning CTGs). CTGs are created pursuant to section 7408.

254. See State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas-Supplement (on Control Techniques Guidelines), 44 Fed. Reg. 53,761, 53,762 (Sept. 17, 1979) (codified at 40 C.F.R. pt. 52) (noting functions of CTGs).

255. See Approval and Promulgation of Nonattainment Plan for Indiana—Particulate Emissions from the Iron and Steel Industry, 45 Fed. Reg. 45,314-15 (July 3, 1980) (codified at 42 C.F.R. pt. 52) (noting state's burden).

256. See *Citizens for a Better Env't v. Costle*, 515 F. Supp. 264, 278-79 (N.D. Ill. 1981) (citing *Rubber Mfrs. Ass'n v. Costle*, 14 Env't Rep. Cas. 2108, 2115 (D. Del. 1980)) (dismissing claims because they were not ripe).

source's responsibility to demonstrate that the controls identified in the CTG are not reasonably available to it.²⁵⁷

Prior to the 1990 CAA Amendments, ozone nonattainment areas were required to adopt RACT rules for VOC sources. The RACT requirements led EPA to issue three sets of CTGs that are presumptive norms for RACT for sources with the potential to emit 100 tons per year of VOCs.²⁵⁸ Under the 1990 CAA Amendments, sections 172(c)(1) and 182(a)(2) require nonattainment areas to submit SIP revisions to update their RACT provisions in order to meet the new requirements.

Pursuant to CAA sections 108 and 183,²⁵⁹ EPA has issued control technique guidelines (CTG) for categories of stationary sources with VOC emissions. The 1990 CAA Amendments required more CTGs to be issued.²⁶⁰ CTGs are used to determine what is RACT for stationary sources of VOCs.²⁶¹ EPA was to issue CTGs for eleven categories of stationary sources of VOCs that were not issued at the time of the CAA Amendments.²⁶² EPA also was to update CTGs issued before November 15, 1990, under section 108.²⁶³ In the CTGs, the Administrator is required to examine the guideline applicable to hazardous waste treatment, storage and disposal facilities that are permitted under RCRA.²⁶⁴ The statute requires CTGs to be issued for the aerospace industry²⁶⁵ and for the shipbuilding and ship repair industries.²⁶⁶

257. See William H. Lewis, Jr. & Hunter L. Prillaman, *Reasonably Available Control Technology Under the Clean Air Act: Is EPA Following Its Statutory Mandate?*, 16 HARV. ENVTL. L. REV. 343, 353-54 (1992) (noting effect of RACTs on states and state regulations).

258. See Approval and Promulgation of Air Quality Implementation Plans; Virginia; Approval of VOC RACT Determination for Individual Sources, 62 Fed. Reg. 53,234 (Oct. 14, 1997) (codified at 40 C.F.R. pt. 52) (detailing CTG's for VOC sources).

259. 42 U.S.C. § 7511b (2000) (explaining EPA's ability under § 7408 to create CTGs).

260. See *id.* at § 7511b(a), (b) (2000) (discussing Administrator's responsibility to create new CTGs).

261. See *id.* at § 7511a(b)(2) (2000) (explaining RACT for VOC sources).

262. See *id.* at § 7511b(a) (2000) (explaining new CTGs which must be created).

263. See *id.* at § 7408(c) (2000) (stating Administrator's power to rescind or modify CTGs).

264. See Clean Air Act § 183(b)(2), 42 U.S.C. § 7511b(b)(2) (2000) (explaining factors Administrator must consider).

265. See *id.* at § 7511b(b)(3) (explaining Administrator's responsibility to create CTGs for aerospace coatings and solvents).

266. See *id.* at § 7511b(b)(4) (explaining Administrator's responsibility to create CTGs for shipbuilding and repair paints, coatings and solvents).

Alternatively, consumer and commercial products must meet BAC, as defined in section 183(e)(1)(A).²⁶⁷ EPA's Administrator was required to study VOC emissions from consumer and commercial products and establish criteria to regulate them. EPA is to regulate consumer or commercial products that account for eighty percent of the VOC emissions in areas that violate the NAAQS for ozone.²⁶⁸ The Administrator was to divide products into four groups based on their priority for regulation. On March 23, 1995, EPA published the priority list for products that account for eighty percent of VOC emissions on a reactivity-adjusted basis.²⁶⁹ On April 2, 1996, EPA promulgated a proposed rule to implement section 183(e) with VOC emission standards for consumer products.²⁷⁰ EPA was required to regulate one group every two years, beginning two years after publication of the list.²⁷¹ EPA issued a memorandum on June 23, 1995, spelling out its policy that ozone nonattainment areas may take credits for reductions in VOCs in their SIP revisions, based on regulations to be promulgated under this subsection.²⁷² On August 22, 1997, EPA proposed to use CTGs in lieu of national regulations issued as BAC as the basis for emission controls applied to coating operations in the wood furniture manufacturing, aerospace and shipbuilding industries.²⁷³ EPA stated the use of CTGs, rather than BAC requirements, might be more effective because it would regulate end-users that apply large volumes of coatings at known locations rather than regulating the

267. See generally *id.* at § 7511b(e)(1)-(4) (stating methods of consumer product regulation).

268. See *id.* at § 7511b(e)(3)(A) (explaining how and what consumer products are regulated).

269. See Consumer and Commercial Products: Schedule for Regulation, 60 Fed. Reg. 15,264, 15,268 (Mar. 23, 1995) (to be codified at 40 C.F.R. Chap. 1) (listing consumer products to be regulated).

270. See generally National Volatile Organic Compound Emission Standards for Consumer Products, 61 Fed. Reg. 14,531 (Apr. 2, 1996) (codified 40 C.F.R. pt. 59) (stating EPA's proposed standards).

271. See Clean Air Act § 183(e)(3)(A), 42 U.S.C. § 7511b(e)(3)(A) (2000) (stating EPA's regulatory procedure).

272. See *Air Pollution: States Allowed Credit VOC Reductions from Consumer Products for Ozone Plans*, Daily Env't Rep. (BNA), July 21, 1995, at A-1, D-4; see also Alec C. Zacaroli, *Air Pollution: Upcoming Proposal Has VOC Content Limits for 24 Types of U.S.-Manufactured Products*, Daily Env't Rep. (BNA), Oct. 27, 1995, at AA-1 (stating ozone nonattainment credit system).

273. See Consumer and Commercial Products: Wood Furniture, Aerospace, and Shipbuilding and Ship Repair Coatings: Control Techniques Guidelines in Lieu of Regulations, 62 Fed. Reg. 44,672 (Aug. 22, 1997) (explaining CTGs would be similar to national regulations).

content of the solvents and coatings.²⁷⁴ Automobile refinish coatings were in the first group to be regulated and the final rule was promulgated on September 11, 1998.²⁷⁵ On the same day, EPA promulgated VOC emission standards for twenty-four categories of household consumer products²⁷⁶ and for architectural coatings.²⁷⁷ On June 16, 2000, the D.C. Circuit upheld the architectural coating regulations.²⁷⁸

§ 3(a)(1)(iii). Inspection And Maintenance Of Motor Vehicles (I/M)

Section 182(a)(2)(B)²⁷⁹ required states with marginal ozone nonattainment areas having existing I/M programs, or that were required to include I/M programs in their SIPs by the pre-1990 Act, to submit revisions to EPA necessary to provide for a program no less stringent than that required prior to enactment or committed to in the SIP in effect at enactment, whichever is more stringent. The 1970 CAA provided for I/M programs to be used to meet SIP requirements, but only a few jurisdictions created such a program.²⁸⁰ In 1977, I/M was mandated for ozone or CO nonattainment areas that sought an extension for compliance until 1987.²⁸¹ The pre-1990 I/M programs required annual inspections using a short test that identified high emitting vehicles. It was usually performed while the vehicle was stationary and running in a high-idle mode. The test measured CO and HC, but did not measure NO_x. It was often performed at service stations, but some states had cen-

274. See *National VOC Rules For Three Industries May Be Abandoned For Control Guidelines*, 28 Env't Rep. (BNA) 773 (Aug. 29, 1997) (explaining reasons for using CTGs instead of national regulations).

275. See *National Volatile Organic Compound Emission Standards for Automobile Refinish Coatings*, 63 Fed. Reg. 48,806 (Sept. 11, 1998) (codified at 40 C.F.R. pts. 9, 59) (noting that regulation was pursuant to § 183).

276. See *National Volatile Organic Compound Emission Standards for Consumer Products*, 63 Fed. Reg. 48,819, 48,820 (Sept. 11, 1998) (codified at 40 C.F.R. pts. 9, 59) (stating EPA's VOC standards for consumer products).

277. See Table 1 to Subpart D—Volatile Organic Compound (VOC) Content for Architectural Coatings 40 C.F.R. § 59 (2003) (explaining emission standards for architecture industry).

278. See *Allied Local and Reg'l Mfrs. Caucus, et al. v. EPA*, 215 F.3d 61, 66 (D.C. Cir. 2000) (holding that EPA's interpretation was lawful).

279. 42 U.S.C. § 7511a(a)(2)(B)(i) (2000) (describing procedure for Marginal Areas).

280. See Arnold W. Reitze, Jr., *Controlling Automotive Air Pollution Through Inspection and Maintenance Programs*, 47 GEO. WASH. L. REV. 705, 715 (1979) (stating that states focused on stationary sources and left federal government to regulate automobiles).

281. See Clean Air Act § 172(b)(11)(B), 42 U.S.C. § 7502(b)(11)(B) (stating standards of pre-1990 version) (explaining requirements for continuation).

tralized inspections. This program, with some adjustments, was continued as basic I/M.²⁸² Fifty-five urban areas that had no I/M program had to implement one by July 1993.²⁸³ Enhanced I/M would be necessary in more seriously polluted areas, including much of the Northeastern United States.²⁸⁴

§ 3(a)(1)(iv). *New Source Review*

Constructing and operating new or modified major stationary sources requires a permit²⁸⁵ that meets requirements found in section 172(c)(5),²⁸⁶ revised section 173,²⁸⁷ and subpart 2 of Part D. New or modified major stationary sources must comply with the lowest achievable emission rate (LAER).²⁸⁸ Offsets of at least 1.1 to 1 are required for new VOC emissions.

§ 3(a)(1)(v). *Reformulated Gasoline "opt-in"*

The governor of any state with a marginal, moderate, serious or severe ozone nonattainment area may apply to the Administrator to opt-in to the reformulated gasoline program established under section 211(k).²⁸⁹

§ 3(a)(2). *Moderate Areas — Section 182(b)*²⁹⁰

These areas exceed the ozone standard by fifteen percent to thirty-three percent (0.138 ppm up to but not including 0.160 ppm) and were to meet the primary NAAQS by November 15, 1996. Moderate areas must meet all marginal area requirements, as well as the following additional requirements.

§ 3(a)(2)(i). *Requirement For Fifteen Percent Reduction In Emissions*

By November 15, 1993, ozone nonattainment areas classified as moderate and above were to submit a plan revision reflecting an

282. See *infra* § 3(a)(2). The I/M program is covered in depth in *Federalism*, *supra* note 94.

283. See Vehicle Inspection and Maintenance Requirements for State Implementation Plans, 57 Fed. Reg. 31,058, 31,074-75 (July 13, 1992) (codified at 40 C.F.R. pt. 51) (stating I/M requirements for urban areas).

284. See *infra* § 3(a)(3)(vii).

285. See Clean Air Act §§ 172(c)(5), 182(a)(2)(c), 42 U.S.C. §§ 7502(c)(5), 7511a(a)(2)(c) (2000) (describing permits and permit requirements).

286. See *id.* at § 7502(C)(5) (stating standards for new permits).

287. See *generally id.* at § 7503(a) (explaining permit requirements).

288. See *id.* at § 7503(a)(2) (stating that sources must comply with LAER).

289. See *id.* at § 7545(k) (explaining reformulated gasoline program).

290. 42 U.S.C. § 7511a(b) (2000) (explaining treatment of moderate areas).

actual reduction in typical ozone season weekday VOC emissions of at least fifteen percent during the first six years after enactment.²⁹¹ The fifteen percent emission reductions are calculated from the 1990 baseline of actual emissions²⁹² and must account for any net growth in emission. Baseline emissions are adjusted to exclude biogenic emissions.²⁹³ Growth is calculated by multiplying the base year inventory by forecasting indicators acceptable to EPA based on its guidance documents. Growth must be determined separately for each source or source category.²⁹⁴ To estimate growth for area sources, growth factor surrogates such as population, employment and vehicle miles traveled (VMT) may be used. On-road emissions are estimated using an EPA mobile source computer model. Point source emission growth can be estimated from surrogates in accordance with EPA guidance documents.²⁹⁵ The SIP was to be revised to project a VOC reduction of fifteen percent by November 15, 1996, unless new source review requirements were imposed on sources emitting five TPY or more of VOCs and all existing sources of five TPY or more of VOCs have RACT. Section 182(b)(1)(A)²⁹⁶ requires a SIP for a moderate ozone nonattainment area to provide for specific annual reductions in VOC and NO_x emissions "as necessary to attain the national primary ambient air quality standard for ozone." This requirement is met by applying EPA-approved modeling techniques.²⁹⁷

All emission reductions from state or federal programs are creditable toward the fifteen percent progress requirement except: (1) those due to motor vehicle tailpipe or evaporative standards

291. See *id.* at § 7511a(b)(1) (2000) (explaining requirements of revised plan).

292. See *id.* (stating baseline of actual emission is used as a basis). Baseline emissions are defined in § 7511(a)(b)(1)(B).

293. See Approval and Promulgation of Air Quality Implementation Plans; District of Columbia and State of Maryland - 1990 Base Year Emission Inventory for the Metropolitan Washington D.C. Area, 62 Fed. Reg. 19,676-77 (April 23, 1997) (codified at 40 C.F.R. pt 52) (explaining what items are excluded when determining 15 percent).

294. See Approval and Promulgation of Air Quality Implementation Plans; Maryland; 15% Plan for Metropolitan Washington, D.C. Area, 62 Fed. Reg. 30,821-22 (June 5, 1997) (codified at 40 CFR pt. 52) (elaborating on how growth effects determination of 15 percent).

295. See *id.* (describing factors which may be used in estimates).

296. See 42 U.S.C. § 7511a(b)(1)(A) (2000) (noting reductions must be made until they meet air quality standards).

297. See Memorandum from Darryl D. Tyler to Director, Air Division Region I-X (Jan. 29, 1987) (on file with EPA), available at http://www.epa.gov/ttn/nsr/psd1/p6_20.html (last visited Feb. 11, 2004) (stating modeling techniques in accordance with EPA's should be approved).

promulgated prior to 1990; (2) federal regulations on fuel volatility promulgated by November 15, 1990, or required under section 211(h);²⁹⁸ (3) state regulations required under section 182(a)(2)(A)²⁹⁹ submitted to correct deficiencies in existing VOC RACT regulations or previously required RACT rules; and (4) state regulations required under section 182(a)(2)(B)³⁰⁰ submitted to correct deficiencies in existing I/M programs or previously required I/M programs.

§ 3(a)(2)(ii). *Contingency Measures*

States with moderate and above ozone nonattainment areas had to include sufficient contingency measures in the November 1993 submittal so that, upon implementing such measures, additional emissions reductions of up to three percent of the emissions in the adjusted base year inventory (or such lesser percentage that will cure the identified failure) would be achieved in the year following the year in which the failure has been identified.

§ 3(a)(2)(iii). *RACT "catch-ups"*

The 1990 CAA Amendments requires areas that are moderate areas or worse to adopt additional RACT standards in addition to the RACT "fix-up" requirement of section 182(a)(2)(A).³⁰¹ It requires moderate and above nonattainment areas that previously were exempt from certain RACT requirements to "catch-up" to those nonattainment areas that have been subject to those requirements. There are three parts to the section 182(b)(2) RACT requirement: (1) RACT for sources covered by a CTG issued prior to the enactment of the Amendments; (2) RACT for sources covered by postenactment CTGs; and (3) all major sources not covered by a CTG.³⁰² EPA was required to adopt eleven CTG's before November 15, 1993.³⁰³

298. See 42 U.S.C. § 7511a(a)(1)(D) (2000) (noting that emissions under § 7545 are exempt).

299. See *id.* at § 7511a(a)(2)(A) (2000) (naming state regulations).

300. See *id.* at § 7511a(a)(2)(B) (2000) (providing additional state requirements).

301. See *id.* at § 7511a(a)(2)(A) (describing RACT fix-up procedures).

302. See *id.* at § 7511a(b)(2) (describing areas new plans apply to explaining aspects of RACT).

303. See Clean Air Act § 183(a), 42 U.S.C. § 7511b(a) (2000) (noting new CTGs must be created).

§ 3(a)(2)(iv). *Gasoline Vapor Recovery (Stage II Vapor Recovery Systems)*

States were to submit a revised SIP by November 15, 1992, which required owners or operators of gasoline dispensing systems that dispense more than 10,000 gallons of gasoline per month (or 50,000 gallons per month for the "independent small business marketers" defined under section 324)³⁰⁴ to install and operate gasoline vehicle refueling vapor recovery ("Stage II") systems in ozone nonattainment areas designated as moderate and above.³⁰⁵ Government and company fleet fueling facilities, as well as retailers are subject to the Stage II requirements. For stations dispensing at least 100,000 gallons per month, based on the two year period before the adoption date, states must require Stage II to be effective under a specified phase-in schedule of six months after the State adopts the required regulation. For all other facilities required to install controls, states were given two years after the adoption date.

§ 3(a)(2)(v). *Basic I/M*

The 1990 CAA Amendments required 181 areas in thirty-eight states to have basic or enhanced I/M programs.³⁰⁶ Ozone and CO nonattainment areas were required to have a basic I/M program. Marginal or worse ozone areas or moderate CO nonattainment areas with a design value less than 12.7 parts per million (ppm) were to continue existing I/M programs, but had to update them to meet the 1990 requirements for basic I/M.³⁰⁷ Moderate ozone nonattainment areas were required to have a basic I/M program³⁰⁸ in any 1990 census-defined urbanized area.³⁰⁹

304. See *id.* at § 7625(a) (2000) (defining independent and small business marketers).

305. See *id.* at § 7511a(b)(3) (2000) (elaborating on vapor recovery system rules).

306. United States Environmental Protection Agency, *Guidance on Use of Remote Sensing For Evaluation of I/M Program Performance*, July 2002, available at <http://www.epa.gov/otag/regis/im/obd/b02001.pdf> [hereinafter FACTS AND FIGURES] (explaining effect of 1990 Amendments).

307. See Clean Air Act §§ 182(a)(2)(B), 187(a)(4), 42 U.S.C. §§ 7511(a)(2)(B), 7512a(a)(4) (2000) (stating design value and attainment dates). The design value is the ambient level of ozone or CO used by EPA for classification purposes and is expressed in parts per million. It is calculated using methodology issued by the Administrator. *Id.* at §§ 181(a)(1), 186(a)(1).

308. See *id.* at § 182(b)(4); see also Inspection/Maintenance Program Requirements, 57 Fed. Reg. 52,950, 52,965 (Nov. 5, 1992) (codified at 40 C.F.R. pt. 51) (defining all as without exception).

309. See Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,950, 56,965-66 (codified at 40 C.F.R. pt. 51) (noting moderate I/M requirements apply to only urban areas).

In moderate or worse ozone nonattainment areas, an inspection and maintenance (I/M) program is required for motor vehicles. EPA promulgated proposed I/M regulations on July 13, 1992, and final regulations were issued on November 5, 1992.³¹⁰ Section 182(b)(4)³¹¹ required moderate ozone nonattainment areas to implement basic I/M programs at least as stringent as those required in section 182(a)(2)(B),³¹² even if an I/M program had been implemented. Therefore, all moderate areas had to comply with programs committed to in the SIP in effect on November 15, 1990, or develop a basic I/M program consistent with EPA's guidance, whichever was more stringent.

The program for basic I/M areas after the 1990 CAA Amendments remained about the same as the program required by the 1977 Amendments. It is based on the I/M program established by New Jersey in the early 1970s³¹³ and requires the use of a computerized BAR-90 analyzer or a similar quality analyzer.³¹⁴ It requires only a basic idle test, but more sophisticated tests may be used. The basic I/M program does not regulate NO_x, but NO_x levels in the nonattainment area may not increase due to the basic I/M program unless such increases will not prevent or delay attaining the NAAQS.³¹⁵

EPA upgraded I/M regulations to provide minimum standards concerning inspection frequency, test methods, components covered, quality control and enforcement.³¹⁶ EPA released a notice of proposed rulemaking on July 13, 1992 and a final rule on Novem-

310. *See generally id.* (stating EPA's I/M program requirements); *see also* Vehicle Inspection and Maintenance Requirements for State Implementation Plans, 57 Fed. Reg. 31,058, 31,062 (July 13, 1992) (codified at 40 C.F.R. pt. 51) (stating new I/M tests and EPA standards).

311. *See* 42 U.S.C. § 7511a(b)(4) (2000) (explaining I/M requirements).

312. *See id.* at § 7511a(a)(2)(B) (describing requirements for I/M of marginal areas).

313. *See* Inspection/Maintenance Program Requirements, 57 Fed. Reg. 52,950, 52,954 (Nov. 5, 1992) (codified at 40 C.F.R. pt. 51 (2003)) (discussing performance standards).

314. *See id.* at 52,968 (describing California's I/M program similarities with that of New Jersey).

315. *See id.* at 52,954, 52,989 (illustrating NO_x issues).

316. *See* Clean Air Act § 182(a)(2)(B), 42 U.S.C. § 7511a(a)(2)(B) (2000) (discussing EPA upgrades to I/M regulations).

ber 5, 1992.³¹⁷ The states were to submit a SIP revision to meet the requirements within two years of the date of the final rule.³¹⁸

§ 3(a)(2)(vi). *NSR Offset Ratio*

For ozone nonattainment areas classified as moderate, the emissions offset ratio must be at least 1.15 to 1.

§ 3(a)(2)(vii). *Bump-up Requirements*

Section 181(b)(2)³¹⁹ requires a marginal, moderate or serious ozone nonattainment area to be reclassified to the next higher classification at the time EPA determines that the area failed to meet the standard by the applicable attainment date. EPA uses the term "bump-up" to describe this reclassification process. An area cannot be bumped-up to the extreme classification under this provision. EPA sometimes resisted bumping areas to the next classification, but a series of cases hold that bump-ups are not discretionary.³²⁰ A bump-up to the serious category under section 107(d)(4)(A)³²¹ may result in new boundaries for the area.

§ 3(a)(2)(viii). *NO_x Control In Ozone Nonattainment Areas*

Section 182(f) requires states with moderate or above ozone nonattainment areas or that are in the Northeast Ozone Transport Region, established by CAA section 184(a), to apply the same requirements to major stationary sources³²² of NO_x as are applied to major stationary sources of VOCs. Section 182(f) requirements for the reduction of NO_x emissions using RACT were described by EPA in a notice published November 25, 1992.³²³ Submitting RACT

317. See Vehicle Inspection and Maintenance Requirements for State Implementation Plans, 57 Fed. Reg. 31,058, (proposed July 13, 1992) (codified at 40 C.F.R. pt. 51) (proposing rule to establish performance standards and other requirements for vehicle inspection and maintenance programs); see also Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,950 (proposing rule to establish performance standards and other requirements for vehicle and maintenance programs).

318. See *id.* (discussing need for SIP revision).

319. 42 U.S.C. § 7511(b)(2) (2000) (describing "bump-up" when area does not meet standard by attainment date).

320. See *infra* § 3(a)(3)(v) (illustrating non-discretionary nature of bump-ups).

321. See 42 U.S.C. § 7407(d)(4)(A) (2000) (describing process for nonattainment designations).

322. See *id.* at §§ 7602, 7511a(c), (d), (e) (defining term "major").

323. See State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 55,620 (proposed Nov. 25, 1992) (codified 40 C.F.R. pt. 52) (describing requirements for reduction of NO_x using RACT).

rules for major stationary sources of VOC emissions (not covered by a CTG document) was required by November 15, 1992. States, in their RACT rules, were to require final installation of NO_x controls by May 31, 1995, at sources for which installation by that date was practicable.

§ 3(a)(3). *Serious Areas — Section 182(c)*³²⁴

These are areas that exceed the ozone standard by thirty-three percent to fifty percent (0.160 ppm up to but not including 0.180 ppm). These areas must meet the primary NAAQS by November 15, 1999. Serious areas are required to meet all moderate area requirements, unless otherwise noted, as well as the following additional requirements.

§ 3(a)(3)(i). *Major Stationary Source Definition*

Any stationary source that has the potential to emit at least fifty TPY of VOC is a major source.

§ 3(a)(3)(ii). *NSR — Offset Ratio*

The emissions offset ratio must be at least 1.2 to 1 for VOC emissions. New source review provisions are applicable to sources with net increases that exceed twenty-five tons per year of VOC. There are special rules for modification of VOC sources.

§ 3(a)(3)(iii). *Enhanced Monitoring*

SIPs for serious ozone nonattainment areas must contain a program of measures designed to enhance and improve ambient air quality monitoring and emissions monitoring.³²⁵

§ 3(a)(3)(iv). *Attainment Demonstration*

A SIP for a serious ozone nonattainment area had to demonstrate by November 15, 1994,³²⁶ that attainment could be met by

324. 42 U.S.C. § 7511a(c) (2000) (describing serious areas of nonattainment).

325. *See id.* at § 7511a(c)(1) (illustrating SIPs requirements for enhanced monitoring).

326. *See id.* at § 7511a(c)(2)(A) (describing attainment demonstration). The “attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator’s discretion, to be at least as effective.” *Id.* This requirement can be met through the use of EPA-approved modeling techniques for SIP revisions. *See* EPA’s *GUIDELINE ON AIR QUALITY MODELS* (Revised) (1986) (recommending Urban Airshed Model for modeling applications involving entire urban areas).

1999 by submitting a rate of progress demonstration.³²⁷ This plan had to provide for reductions in the ozone season weekday VOC emissions of at least three percent per year, averaged over each consecutive three year period beginning in 1996 until the attainment date. This is in addition to the fifteen percent reduction over the first six year period required in areas classified as moderate and above. A NO_x control plan is required as specified in guidance documents that the Administrator must issue.³²⁸ Serious and above ozone areas must show that they achieved their rate of progress emissions reductions (called milestones) in the "compliance demonstrations" required by section 182(g)(2).³²⁹

§ 3(a)(3)(v). *Bump-up Requirements*

As discussed, in § 3-3(a)(3)(vii), marginal, moderate and serious areas are to be bumped up if they fail to attain. Section 182(g)³³⁰ adds additional bump-up provisions for serious and severe areas that miss a milestone, which allow such areas to bump up to the next higher classification to satisfy the milestone requirements. Any area newly classified as a severe ozone nonattainment area due to bump-up provisions or reclassification³³¹ under section 181(b) is subject to the reformulated gasoline program under section 211(k).³³² The program must be in effect one year after reclassification.

On July 2, 2002, the D.C. Circuit ruled on the first of several appeals brought to force EPA to reclassify areas to a more stringent classification because of a failure to meet a deadline for attainment.³³³ Washington, D.C., Maryland and Virginia requested that EPA extend the attainment deadline for the Washington, D.C. area without reclassifying the area as severe because ozone from upwind areas interfered with their ability to achieve attainment.³³⁴ The Agency granted the states' request for an extension, and environ-

327. See Clean Air Act § 182(c)(2)(B), 42 U.S.C. § 7511a(c)(2)(B) (2000) (describing reasonable further progress demonstration).

328. See *id.* at § 7511a(c)(2)(C) (discussing Administrator's authority regarding NO_x control).

329. See *id.* at § 7511a(g)(2) (describing compliance demonstrations).

330. *Id.* at § 7511a(g) (describing additional bump-up provisions).

331. See *id.* at § 7511(b) (describing effects of additional bump-up provisions or reclassification).

332. See 42 U.S.C. § 7545(k) (2000) (discussing reformulated gasoline for conventional vehicles).

333. See *Sierra Club v. EPA*, 294 F.3d 155 (D.C. Cir. 2002) (involving reclassification of area that failed to meet attainment date).

334. See *id.* at 159 (illustrating fact that states wanted attainment date extension).

mental organizations petitioned the D.C. Circuit for review of EPA's order. The D.C. Circuit ruled that EPA exceeded its statutory authority by extending the metropolitan Washington, D.C. region's attainment deadline for complying with the CAA by five years without reclassifying the area to a severe ozone nonattainment area.

EPA had granted the five-year extension without reclassifying the region because EPA determined that much of the region's air quality problems stem from pollution sources upwind from the region.³³⁵ EPA also approved a proposed regional SIP that did not include any RACM, rate of progress reductions, or contingency measures.³³⁶ The D.C. Circuit noted that all these requirements are clearly spelled out in CAA section 172(c), and EPA cannot arbitrarily and capriciously ignore them.³³⁷ The court signaled that nonattainment areas will be strictly held to the requirements of CAA section 172(c), and EPA cannot circumvent explicit language in the statute by claiming to follow the broader Congressional purpose of the CAA. On December 28, 2002, the Federal District Court for the District of Columbia ordered EPA to downgrade the Washington, D.C. metropolitan area to severe ozone nonattainment status.³³⁸ On April 17, 2003, EPA gave conditional approval to the Washington, D.C. metropolitan area's plans to comply with the severe nonattainment area requirements.³³⁹

On November 25, 2002, the U.S. Court of Appeals for the Seventh Circuit came to the same conclusion in a petition for review of an EPA rule that extended St. Louis' attainment deadline by eight years.³⁴⁰ The Seventh Circuit held that EPA had no authority to create an extension, and the Agency was ordered to redesignate St. Louis as a serious nonattainment area.³⁴¹

On December 11, 2002, the U.S. Court of Appeals for the Fifth Circuit made a similar determination for the Beaumont-Port Ar-

335. *See id.* at 161 (describing EPA position that air quality problems cross upwind from the region).

336. *See id.* at 162 (discussing EPA approval of regional SIP).

337. *See id.* at 164 (describing fact that EPA did not adhere to CAA § 172(c) requirements).

338. *See* *Sierra Club v. Whitman*, D.D.C., No. 02-02235 (Dec. 18, 2002) (discussing court order).

339. *See* National Emission Standards for Hazardous Air Pollutants: Hydrochloric Acid Production, 68 Fed. Reg. 19,105 (April 17, 2003) (codified at 40 C.F.R. pt. 63); *see also* Steve Cook, *Committee Approves Actions to Address Deterioration of D.C. Metropolitan Air Quality*, 34 Env't Rep. (BNA) 1823 (Aug. 15, 2003).

340. *See* *Sierra Club v. EPA*, 311 F.3d 853 (7th Cir. 2002).

341. *See id.* at 855 (holding EPA lacked authority to create extension).

thur, Texas area.³⁴² The court held that the plain terms of the CAA preclude an extension of an attainment date. On June 16, 2003, the U.S. Court of Appeals for the Eleventh Circuit held EPA's failure to bump up Atlanta from serious to severe was an invalid exercise of the Agency's authority.³⁴³

After four losses in U.S. Courts of Appeals, EPA abandoned its efforts to approve deadline extensions for nonattainment areas and has required "bump-ups" from serious to severe for the cities involved in these cases. Areas subject to the more stringent requirements imposed on severe areas because of pollution generated in upwind areas are attempting to obtain legislative relief from Congress.³⁴⁴

§ 3(a)(3)(vi). Failure To Meet A Milestone (Economic Incentive Program)

Under section 182(g)(3),³⁴⁵ a state that fails to submit a milestone compliance demonstration for any serious or severe area, as required by section 182(g)(2),³⁴⁶ shall choose from three options: (1) bump up to the next higher classification; (2) implement additional measures (beyond those in the contingency plan which will already be triggered and implemented) to achieve the next milestone; or (3) adopt an economic incentive program.³⁴⁷

One leading scholar has opined that "the CAA's milestone program offers little optimism regarding its ability to ensure institutional accountability. Thus far, the program has failed to deliver the promised emissions reductions, to determine why the mile-

342. See *Sierra Club v. EPA*, 314 F.3d 735 (5th Cir. 2002) (holding EPA lacked authority to create extension).

343. See *Southern Org. Comm. For Econ. & Social Justice v. EPA*, 333 F.3d 1288 (11th Cir. 2003) (holding EPA's action invalid regarding failure to bump-up).

344. See *House Republicans Eye Plan Restoring Unlawful EPA Ozone Extension*, XX Env'tl. Policy Alert, Inside EPA, July 23, 2003, at 15:13 (discussing various areas attempts to obtain relief from Congress).

345. 42 U.S.C. § 7511a(g)(3) (2000) (outlining three options for areas that fail to meet requirements of Clean Air Act § 182(g)(2)).

346. See *id.* at § 7511a(g)(2) (discussing compliance demonstration).

347. See *id.* at § 7511a(g)(3), (4). Based on the schedule in section 182(g)(3) for state election, EPA review of election, and the associated SIP revision (section 182(g)(3)), the time available to develop and implement required additional measures or an economic incentive program will be extremely limited if the state waits until a failure occurs to initiate the program of choice. *Id.* Thus, EPA urges states to initiate program development as soon as they determine that a failure is likely. *Id.*

stones have been missed and to hold the relevant institutions accountable for those failures.”³⁴⁸

§ 3(a)(3)(vii). *Enhanced I/M*

Enhanced I/M is required in serious or worse ozone nonattainment areas, or moderate or serious CO nonattainment areas with a design value greater than 12.7 ppm³⁴⁹ and with a 1980 census population of 200,000.³⁵⁰ Areas needing a program are determined from the 1980 census data, but the boundaries are to be determined from the 1990 census data.³⁵¹ In addition, ozone transport regions are subject to enhanced I/M requirements if they are Metropolitan Statistical Areas (MSAs) with a 1990 population of 100,000 or more, regardless of attainment status, if their emissions of ozone precursors contribute to a violation of state or federal air quality standards for ozone.³⁵² A commuter corridor may also be subject to enhanced I/M. This is an area not within an enhanced or basic I/M program area, but is an origin or destination of vehicular movements that significantly and regularly cause or contribute to ambient air quality violations in a program area.³⁵³ In the Northeast Ozone Transport Region, enhanced I/M is required in densely populated areas;³⁵⁴ largely rural counties with less than 200 persons per square mile are exempt if at least fifty percent of any given MSA is included in the enhanced I/M program.³⁵⁵ Islands off the Northeast United States coast unconnected to the mainland are also exempt.³⁵⁶ Ozone or CO nonattainment areas that are serious,

348. Thomas O. McGarity, *Missing Milestones: A Critical Look At The Clean Air Act's VOC Emissions Reduction Program in Nonattainment Areas*, 18 VA. ENVTL. L.J. 41 (1999) (criticizing milestone program).

349. See Clean Air Act § 187(a)(6), 42 U.S.C. § 7512a(a)(6) (2000) (describing cutoff for severe areas that result in enhanced I/M).

350. See *id.* at § 182(c)(3)(A); see also Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,966 (describing second requirement needed for enhanced I/M in serious or worse ozone nonattainment areas).

351. See Clean Air Act § 182(c)(3)(A), 42 U.S.C. § 7511a(c)(3)(A); see also Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,966 (describing fact that areas determined based on 1980 census data, while boundaries determined based on 1990 census data).

352. See Clean Air Act § 184(b)(1)(A), 42 U.S.C. § 7511c(b)(1)(A) (2000) (describing additional requirements imposed on ozone transport regions).

353. See CALIFORNIA I/M REVIEW COMM., PROPOSED LEGISLATIVE CHANGES TO IMPLEMENT ENHANCED VEHICLE INSPECTION AND MAINTENANCE 9 (1992) [hereinafter CALIFORNIA].

354. See Clean Air Act § 184, 42 U.S.C. § 7511c (2000) (requiring enhanced I/M in densely populated areas).

355. See Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,966 (illustrating exemption to enhanced I/M).

356. See *id.* (illustrating additional exceptions to enhanced I/M).

severe, or extreme must include the entire MSA in the nonattainment area.³⁵⁷ If a state expands I/M coverage beyond what the EPA requires, the extra emission credits can only be used to meet "reasonable further progress" requirements or be used as an offset.³⁵⁸

States were to submit an enhanced I/M program by November 15, 1992.³⁵⁹ The EPA was to publish guidance that included a performance standard based on emission testing, including on-road emission testing and inspection to detect tampering with emission controls applicable to light-duty vehicles and trucks.³⁶⁰ The statute goes on to specify seven elements required for an enhanced I/M program: (1) computerized emission analyzers, including on-road testing devices; (2) no waivers for vehicles or parts covered by performance warranties; (3) a minimum expenditure by the consumer of \$450 for repairs, adjusted annually by reference to the consumer price index, before the state can waive emission requirements; (4) enforcement through denial of vehicle registration unless the state can demonstrate a more effective enforcement program; (5) annual inspections unless biennial inspections are as effective; (6) a centralized program unless the state can demonstrate a decentralized program is as effective; and (7) a program for inspection and repair of emission control diagnostic systems.³⁶¹ Section 182(c)(3)(C)(iv) requires denial of motor vehicle registration unless the owner complies with enhanced I/M requirements.³⁶² A registration-based enforcement prevents the processing of registration renewals for registrants that have not submitted proof of a successful emission inspection.

357. See Clean Air Act § 107(d)(4)(A)(iv), 42 U.S.C. § 7407(d)(4)(A)(iv) (discussing need for entire MSA in nonattainment area that is serious, severe or extreme).

358. See Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,967 (describing limitation on extra emission credits earned by state).

359. See Clean Air Act § 182(c)(3)(A), 42 U.S.C. § 7511a(c)(3)(A) (2000) (noting date mandated for states' enhanced I/M submissions).

360. See *id.* at § 7511a(c)(3)(B) (stating need for EPA guidance in publishing testing standards). Light duty vehicles are divided into categories based on loaded vehicle weight (LVW) which is curb weight plus 300 pounds. Vehicles under 3750 pounds LVW are held to almost the same standards as passenger cars. Vehicles between 3751 and 5750 pounds LVW have slightly less stringent standards. *Id.*

361. See *id.* at § 7511a(c)(3)(C) (outlining severe requirements need for state program).

362. See *id.* at § 7511a(c)(3)(C)(iv) (citing fourth element as possible grounds for denying motor vehicle registration).

Most pre-1990 I/M programs required annual inspection using a short test that identified high emitting vehicles.³⁶³ Two distinct emission testing procedures were developed: the idle mode and loaded mode tests.³⁶⁴ The idle mode test measures exhaust emissions with the vehicle in a neutral gear and the engine at idle. To pass the test, the vehicle's HC and CO levels must meet the EPA standards at both normal and high idle speeds. The idle mode test is easy to perform and requires little technical training.³⁶⁵ The test can easily be performed with equipment that most service stations can afford.³⁶⁶

Enhanced I/M requires a loaded mode test that measures exhaust emissions while the vehicle is in a forward drive gear and operating under simulated driving conditions. Because it partially simulates actual driving conditions, the loaded mode test provides a better indication of actual emissions than does the idle mode test. The simulation is also capable of diagnosing engine maladjustments and malfunctions. Loaded tests can measure NO_x emissions, which the idle mode tests cannot measure because NO_x emissions are negligible when the engine is idling. Loaded mode tests are more expensive, however, because they require a chassis dynamometer, greater technical skills and more time.³⁶⁷

The SIP requires a specified percentage of automobiles with the highest emissions to fail an I/M test. The cut point is the level of emissions that distinguishes between those vehicles requiring emissions related maintenance and those that do not. The cut points define a stringency factor (flunk rate) that is a measure of

363. See U.S. ENVTL. PROTECTION AGENCY, INFORMATION DOCUMENT, ON AUTOMOBILE EMISSIONS INSPECTION AND MAINTENANCE PROGRAM 19 (1978).

364. See *id.* (describing two methods of testing).

365. See *id.* at 21-2 (discussing idle mode testing).

366. See *id.* (illustrating idea that most service stations are capable of performing idle mode test).

367. *Id.* Two kinds of loaded mode test procedures exist: steady state and transient. The transient test will yield better correlation than the steady state test with respect to the federal test procedure. The transient test, however, is more expensive to perform and requires more time. The steady state test uses a volumetric procedure, i.e., a standard exhaust emission analyzer can be used. The transient loaded mode test collects a composite emission sample from a specified driving schedule. The composite sample is collected into a constant volume sample (CVS) unit for further analysis to determine pollutant concentration. A chassis of dynamometer loads the vehicle to simulate the desired driving schedule. For this test, however, the dynamometer must be capable of performing at variable inertia weight and road load settings. U.S. ENVTL. PROTECTION AGENCY, INFORMATION DOCUMENT, ON AUTOMOBILE EMISSIONS INSPECTION AND MAINTENANCE PROGRAM 21-2 (1978).

the program's rigor. The more stringent the program, the greater the pollution reductions the state may claim in the SIP.

EPA supported I/M testing by centralized facilities³⁶⁸ using a high-volume, multi-lane station run by the government or a contractor. These facilities are usually highly automated and normally only perform tests—not repairs.³⁶⁹ A decentralized network uses gasoline stations or repair facilities as test centers. The enhanced programs mandated by the 1990 CAA Amendments were to operate centrally, “unless the State demonstrates to the satisfaction of the Administrator that a decentralized program will be equally effective.”³⁷⁰ EPA did not consider it possible for a decentralized test-and-repair facility to meet the performance standard for an enhanced I/M program.³⁷¹ Test and repair stations were to be phased out, with fifty percent of the fleet subject to test-only operations by January 1, 1995, and all vehicles subject to test-only operations by January 1, 1996.

Under the test-only approach aggressively supported by EPA, a vehicle is tested at a test-only station. If the vehicle passes, a certificate of compliance is issued; but if the vehicle fails, it must be repaired by the owner or at a licensed repair facility. After repair, it is returned to the test-only facility and retested. If it passes the emissions test, or if the amount spent on repairs exceeds the waiver amount, a certificate is issued. If the vehicle fails and the amount of money spent on repairs is less than the waiver amount, the process is repeated. This process is known as ping-ponging and can lead to public opposition to test-only programs.³⁷² Because enhanced I/M programs could prevent the use of decentralized programs, small inspection and repair shops vigorously fought EPA, claiming a centralized testing program would have devastating economic effects.³⁷³ EPA, however, believed enhanced I/M was at least three times as effective as the best-designed and well-run pre-1990

368. Systems Control, a leading I/M company in the United States, ran programs in 1990 in Maryland, Florida, Illinois, Minnesota, Washington, California and Alaska.

369. See Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,958 (discussing centralized facilities).

370. Clean Air Act § 182(c)(3)(C)(vi), 42 U.S.C. § 7511a(c)(3)(C)(vi) (2000) (stating preference for centralized facilities unless Administrator is satisfied that decentralized facility is equally effective).

371. See CALIFORNIA, *supra* note 353, at 11.

372. See *id.* at 13 (discussing possibility that test only facilities could generate public dislike for such facilities).

373. See *Auto Shops Urge Penalties on Test, Repair Stations Be Dropped from Clean Air Act Rule*, 3 Inside EPA, (Oct. 23, 1992), at 43:11 (noting public claim of devastating economic effects if centralized testing was put in place).

programs and, therefore, needed to be done only biennially.³⁷⁴ EPA claimed this reduces costs and consumer inconvenience by half and results in only about a three percent loss of the potential emission reduction.³⁷⁵

The enhanced program uses an improved emissions test, known as a transient short test, high-tech test or IM240 exhaust test.³⁷⁶ IM240 uses a dynamometer and measures emissions during cycles of acceleration and deceleration.³⁷⁷ EPA in its regulations did not require pre-1989 vehicles to be visually inspected for tampering, but this omission was challenged by the NRDC, which resulted in the U.S. Court of Appeals for the D.C. Circuit remanding the regulation so EPA could include such a requirement in its regulations.³⁷⁸ EPA defined enhanced I/M to include annual testing of 1968 and later light-duty vehicles and light-duty trucks, with transient mass-emission testing using an IM240 driving cycle required for 1986 and late model year vehicles.³⁷⁹ The mandatory use of the IM240 test, however, was subsequently prohibited by section 348 of the National Highway System Designation Act signed on November 28, 1995.³⁸⁰ In addition, for MY 1986 and later vehicles, a transient evaporative system purge test is required, and for MY 1983 and later vehicles, an evaporative system integrity test is required. For MY 1984 and later vehicles, a visual inspection of the catalytic converter and the fuel inlet restrictor also is necessary.³⁸¹

At the end of 1993, twenty-two states had submitted complete I/M programs to EPA, fifteen had submitted incomplete programs,

374. *See* NRDC v. EPA, 22 F.3d 1125, 1143 (D.C. Cir. 1994) (upholding biennial testing).

375. *See* Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,952; *see also* States, Environmentalists, Industry Clash over EPA's Proposed Car Tests, XIII Clean Air Rep., Inside EPA, (Aug. 27, 1992), at 6:12 (citing EPA's claim that biennial testing strikes appropriate balance between consumer convenience and emissions reduction).

376. *See* Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,951, 52,953-54; *see also* Vehicle Inspection and Maintenance for State Implementation Plans, 57 Fed. Reg. at 31,061 (noting various names transient test goes by).

377. *See* Vehicle Inspection and Maintenance for State Implementation Plans, 57 Fed. Reg. at 31,061 (illustrating I/M240 process).

378. *See* NRDC, 22 F.3d at 1144 (remanding so EPA could include visual inspection for tampering).

379. *See* Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,988-89 (requiring two-speed idle testing for 1981-1985 MY vehicles and single-speed idle testing for pre-1981 MY vehicles).

380. *See* 141 CONG. REC. H12459-01 (1995) (describing prohibition of mandatory I/M240 testing).

381. *See* Inspection/Maintenance Program Requirements, 57 Fed. Reg. at 52,978 (describing need for further visual inspection of MY 1984 and later vehicles).

and the other states were soon expected to submit programs.³⁸² Three states, including California, had legislatures that took no action. In early 1994, EPA threatened California with sanctions under CAA 110(m), which does not require giving the states eighteen months to correct deficiencies as required under CAA section 179.³⁸³ When an earthquake hit California, EPA announced it was not going to pursue sanctions to avoid imposing additional hardship on the state.³⁸⁴ In March 1994, EPA agreed to allow California to have a "hybrid" I/M program with only a small percentage of the vehicles being required to go to test-only stations.³⁸⁵ The California approval encouraged Virginia to enact a law prohibiting separation of test and repair facilities unless the governor certified the separation was federally required.³⁸⁶ EPA, however, did not impose sanctions.³⁸⁷

In November 1994, the mid-term national elections created a Republican majority in Congress, and shortly thereafter, EPA announced it was going to be more flexible in administering the enhanced I/M program. By the spring of 1995, EPA had further changed its position and was willing to allow states considerable freedom to design their enhanced I/M program if the result was reasonable further progress in meeting air quality goals.³⁸⁸ On September 7, 1995, EPA announced it would modify its requirements to provide states with more flexibility to design I/M programs. This, however, did not satisfy some governors who opposed the program because EPA did not lift the fifty percent reduction in emis-

382. See *Air Pollution: States That Failed to Authorize I/M Programs Considered for Sanctions*, Air Office Chief Says, 24 Env't Rep. (BNA) 1333 (Nov. 19, 1993) (discussing states' I/M program readiness at the end of 1993).

383. See *Air Pollution: Sanctions Again Considered by Agency Against Three States for I/M Programs*, 24 Env't Rep. (BNA) 1600 (Jan. 7, 1994) (discussing EPA's threat of sanctions against California).

384. See *Air Pollution: Citing Hardship from Los Angeles Quake, EPA Scuttles Plan for California Sanctions*, 24 Env't Rep. (BNA) 1697 (Jan. 28, 1994) (noting hardship imposed by earthquake preventing imposition of sanctions).

385. See *California: State, Federal Officials Set Agreement on I/M Plan to Bring About Clean Air Act Compliance*, 24 Env't Rep. (BNA) 1982 (Mar. 18, 1994) (allowing California to enact "hybrid" I/M program).

386. See *Virginia: Virginia Law on I/M Programs Leads EPA to Revoke "Protective Finding" for State*, 25 Env't Rep. (BNA) 287 (June 10, 1994) (noting Virginia's enactment of law modifying separation of test and repair facilities unless governor certified that separation was required).

387. See *Virginia: Transportation Projects in State in Limbo as Agency Moves to Lift Sanctions Exemption*, 25 Env't Rep. (BNA) 718 (Aug. 12, 1994) (noting EPA did not impose sanctions).

388. See *Air Pollution: States Allowed Several Scenarios Qualifying as Enhanced I/M in EPA Proposal*, Daily Env't Rep. (BNA), Apr. 20, 1995, at D-4 (discussing more relaxed posture of Congress in allowing States to formulate I/M programs).

sions credits for states using combined test-and-repair facilities.³⁸⁹ On September 18, 1995, a final rule was promulgated.³⁹⁰ This rule created an additional, less stringent enhanced I/M performance standard for areas that meet the requirements for Reasonable Further Progress called the low enhanced I/M performance standard. The low enhanced I/M standard allows testing to be done every other year and allows the required testing to be performed at a decentralized test-and-repair facility.³⁹¹ EPA believed this lesser standard would achieve slightly less than one-third of the emissions reductions of a full strength I/M program.³⁹² States were not happy with EPA's "flexible" I/M rule, however, because EPA automatically imposed a fifty percent discount to the I/M programs emissions reduction allowance.³⁹³

At the end of 1995 the conflict was resolved legislatively. The United States Supreme Court's position in *Garcia v. San Antonio Metropolitan Transit Authority*³⁹⁴ has merit. A state's protection from overreaching by the federal government must come from participating in the political process. On November 28, 1995, President Clinton signed into law the National Highway System Designation Act (NHSDA).³⁹⁵ This Act made several changes in the Clean Air Act with section 348 making two changes in the I/M program. First, EPA "shall not require adoption or implementation by a State of a test-only I/M240 enhanced vehicle inspection and maintenance program as a means of compliance with section 182 or 187 of the Clean Air Act . . . , but the Administrator may approve such a

389. See *Air Pollution: Five Republican Governors Seek Shelter from Congress from I/M Sanctions Threat*, Daily Env't Rep. (BNA), Nov. 15, 1995, at D-20; see also *Inspection/Maintenance Flexibility Amendments*, 60 Fed. Reg. 48,029-02, 48,033 (Sept. 18, 1995) (discussing fact that fifty percent reduction in emission credits was still in place for states using combined test-and-repair facilities).

390. See *Inspection/Maintenance Flexibility Amendments*, 60 Fed. Reg. at 48,029-02 (outlining promulgation of final rule).

391. See *id.*

392. See *Air Pollution: Rule on Inspection, Maintenance Programs Gives States Greater Flexibility*, EPA Says, 26 Env't Rep. (BNA) 896 (Sept. 15, 1995) (explaining flexibility as main purpose in rule change).

393. See *State Officials Not Pleased EPA's Flexible Enhanced I/M Rule Still Does Not Address 50% Discount*, VI Clean Air Rep., Inside EPA, Sept. 21, 1995, at 19:19.

394. *Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528 (1985) (holding, in part, that states' continual role in federal system is primarily guaranteed by structure of federal government itself).

395. See *National Highway System Designation Act*, Pub. L. No. 104-59, 109 Stat. 568 (1995); see also 141 CONG. REC. H12459-01 (1995); *States May Lose Emissions Reductions EPA Wrangling With Highway Act's Impact on Rate of Progress Plans*, IV Clean Air Rep., Inside EPA, Dec. 28, 1995, at 26:6.

program if a State chooses to adopt the program. . . .”³⁹⁶ Second, the “Administrator shall not disapprove or apply an automatic discount to a state implementation plan revision . . . because . . . such plan revision is a decentralized or a test-and-repair program.”³⁹⁷ Under the 1995 law, EPA is prohibited from requiring states to use test-only I/M240 enhanced I/M. EPA is to grant full interim approval to plans that show “a good faith effort” to meet CAA requirements. Nonetheless, the battle between states and EPA continued because the legislation did not lift the discounted credits for states that do not use centralized enhanced I/M.³⁹⁸ While EPA was now prohibited from automatically discounting hybrid I/M programs by fifty percent, state regulators believed EPA was so biased in favor of centralized I/M that the Agency would create new barriers to those states that try to avoid EPA’s prescription to use centralized I/M.³⁹⁹

EPA, however, continued to demonstrate its ability to shift course with the changing political wind. On November 6, 1996, EPA proposed conditional interim approval of Virginia’s enhanced I/M program for eighteen months, pursuant to section 408 of the NHSDA, without a discount, despite the state rejecting the centralized test-only approach.⁴⁰⁰ On January 9, 1998, EPA removed the requirement that states use the I/M240 technology and the Agency allowed less expensive technology to be used.⁴⁰¹ Since 1996, a computer monitoring system called on-board diagnostics, generation II (OBDII) has been required on vehicles. This system monitors a vehicle’s operation. Test equipment is now available, and in use,

396. *National Highway System Designation Act*, Pub. L. No. 104-59, § 348(a) (explaining Administrator restricted from requiring specific methods of compliance with CAA).

397. *Id.* at § 348(b) (illustrating implementation plans that previously warranted discount, now limited).

398. *See Air Pollution: Congress Passes Bill That Would Delete Requirement for Test-Only I/M Facilities*, 26 Env’t Rep. (BNA) 1262 (Nov. 24, 1995) (explaining program provides greater flexibility, but reduces credit toward satisfaction of CAA).

399. *See Despite Flexibility Under Highway Act State Regulators Insist EPA is Still Biased Toward Centralized I/M Testing*, VI Clean Air Rep., Inside EPA, Dec. 28, 1995, at 26:13.

400. *See Approval and Promulgation of Air Quality Implementation Plans; Virginia; Enhanced Motor Vehicle Inspection and Maintenance Program*, 61 Fed. Reg. 57,343 (proposed Nov. 6, 1996) (codified at 40 C.F.R. pt. 52) (noting that interim approval based on Virginia’s good faith estimate that program is both appropriate and successful).

401. *See Minor Amendments to Inspection Maintenance Program Evaluation Requirements; Amendments to the Final Rule*, 63 Fed. Reg. 1362 (Jan. 9, 1998) (codified at 40 C.F.R. pt. 51.353(c)) (explaining goal to allow states additional flexibility for program evaluation).

that allows I/M testing to be done by using the OBDII system, which take less time to perform than an I/M 240 test.

On September 20, 2000, EPA proposed to allow states to use checks of the computerized onboard diagnostic systems (OBD) in lieu of tailpipe tests on model year 1996 or newer vehicles.⁴⁰² Such tests would be less time-consuming for vehicle owners required to have I/M inspections.⁴⁰³ In July 2001, the National Research Council issued a report stating that pollution reductions from I/M programs were greatly overestimated. The panel said the programs may be achieving only half the levels projected or no reductions at all. The panel recommended that states make greater use of remote sensing in order to detect high emitters that make up about ten percent of the vehicle fleet, but produce about half the vehicular air pollution.⁴⁰⁴

On January 1, 2002, Colorado announced it was going to test a remote sensing inspection program as part of its I/M program that tightened its requirements by forty percent for hydrocarbons and twenty-five percent for nitrous oxide for 1996 and later model year vehicles.⁴⁰⁵ Other states are also increasing the stringency of their I/M programs. For example, in California, the South Coast Air Quality Management District (SCAQMD) announced its intention to impose strict I/M testing requirements in more areas.⁴⁰⁶ Litigation also was filed in California to force the San Francisco Bay Area to test vehicles using the enhanced I/M program.⁴⁰⁷ New Jersey, New York, Maryland, Massachusetts, Maine and Connecticut require heavy-duty diesel engine vehicles to be subject to I/M testing

402. See Amendments to Vehicle Inspection Maintenance Program Requirements Incorporating the Onboard Diagnostic Check, 65 Fed. Reg. 56,844 (proposed Sept. 20, 2000) (codified at 40 C.F.R. pt. 51, 85).

403. See *Additional Time to Be Given for Comment On Use of OBD in Auto Inspection Programs*, Daily Env't Rep. (BNA), Oct. 24, 2000, at A-11.

404. See *Benefits of Auto Inspection, Maintenance Overestimated, Research Council Reports*, 32 Env't Rep. (BNA) 1405 (July 20, 2001) (converging details of National Research Council report conducted at Congressional request to determine effectiveness of I/M programs). The report is available at <http://www.nap.edu> (last visited Oct. 8, 2003).

405. See Tripp Baltz, *Colorado's Vehicle Testing Standards Get Tougher; Clean Screening to Begin*, Daily Env't Rep. (BNA), Jan. 4, 2002, at A-7.

406. See Carolyn Whetzel, *Tougher Vehicle Inspection Requirements Urged for Parts of South Coast Air District*, Daily Env't Rep. (BNA), Feb. 4, 2002, at A-9. Most vehicles in the Los Angeles air basin are subject to enhanced I/M requirements. *Id.*

407. See Carolyn Whetzel, *Sacramento Air Quality Officials Join Fight For Tougher Bay Area Vehicle Inspections*, 33 Env't Rep. (BNA) 655 (Mar. 22, 2002) (illustrating Sacramento Metropolitan Air Quality Management's concern that air pollution generated in San Francisco Bay area blows into Central Valley and San Francisco Bay's use of substandard I/M program).

programs. These programs, however, cannot be used to obtain credit in a SIP because EPA has not yet developed a way to measure their air quality benefit.⁴⁰⁸ In 2000, North Carolina expanded its I/M to cover the forty-eight counties with the largest population; in 2002, EPA approved the state's enhanced I/M program.⁴⁰⁹ On October 24, 2002, a federal district court ruled that the citizen suit provision of the CAA could be used to sue Pennsylvania for failure to implement an I/M program included in the SIP; the Eleventh Amendment of the Constitution does not prevent the suit because it was aimed at individual state officers who were violating federal law.⁴¹⁰ On June 27, 2003, EPA announced that it will require vehicle manufacturers to provide repair shops with the information needed to service and repair vehicles with on-board diagnostics.⁴¹¹

§ 3(a)(3)(viii). *Clean-fuel Vehicle Program*

Sections 182(c)(4)⁴¹² and 246⁴¹³ contain SIP requirements for areas classified as serious or worse ozone nonattainment (based on 1987, 1988 and 1989 calendar year data) and with a 1980 population of 250,000 or more. SIP provisions for implementing the clean-fuel vehicle program for centrally fueled fleet vehicles were to be submitted to EPA by May 15, 1994. Areas with a 1980 population of 250,000 or more that are reclassified at some future date as serious or above ozone nonattainment areas must submit revisions within one year of reclassification. The Administrator may adjust the compliance deadlines for newly classified areas where compli-

408. See *EPA Begins Effort To Add Diesel Emissions Testing To I/M Programs*, XIX Env'tl. Pol'y Alert, Inside EPA, May 1, 2002, at 9:17.

409. See Andrew M. Ballard, *Approval of Vehicle Inspection Program Paves Way for NO_x Emissions Credit Trading*, 33 Env't Rep. (BNA) 2379 (Nov. 1, 2002) (explaining that flexibility, cars, improved technology and efficiency were key motivators behind EPA approval of North Carolina program).

410. See *Judge Says Pennsylvania Violated Air Act By Shelving Vehicle Plan*, XIII Clean Air Report, Inside EPA, Nov. 7, 2002, at 23:13.

411. See *Control of Air Pollution from Motor Vehicles and New Motor Vehicle Engines; Revisions to Regulations Requiring Availability of Information for Use of On-Board Diagnostic Systems and Emission-Related Repairs on 1994 and Later Model Year Light-Duty Vehicles and Light-Duty Trucks and 2005 and Later Model Year Heavy-Duty Vehicles and Engines Weighing 14,000 Pounds Gross Vehicle Weight or Less*, 68 Fed. Reg. 38,428 (June 27, 2003) (finding modifications to EPA's Service Information regulations for light-duty vehicles and trucks); see also Pamela Najor, *Rule Requires Automakers to Provide Emissions Information for Repair Shops*, 34 Env't Rep. (BNA) 1497 (July 4, 2003) (requiring information for any remaining use of I/M programs and State I/M programs voluntarily incorporating OBD checks into their programs).

412. 42 U.S.C. § 7511a(c)(4) (2000) (governing state submission and Administrator approval of clean fuel vehicle programs).

413. *Id.* at § 7586 (2000) (governing centrally fueled fleets).

ance with the deadlines would be infeasible. The programs must require a specified percentage of certain fleet vehicles purchased in model year 1998 and thereafter to be clean-fuel vehicles and use clean alternative fuels when operating in the area.⁴¹⁴ EPA's regulations concerning this program are found at 40 C.F.R. part 88, subpart C (2002).

Each state subject to the fleet program could submit a SIP revision by November 15, 1992, consisting of fully adopted control measures as a substitute for all or a portion of the clean-fuel vehicle program required by section 246.⁴¹⁵ The substitute measures must demonstrate to the Administrator's satisfaction that the long-term reductions in air emissions of ozone precursors and toxic substances are, at a minimum, equal to those that would be achieved under the clean-fuel vehicle program. Substitute measures may not include any measures otherwise required by the Act; however, they would count toward the rate of reduction requirements (i.e., fifteen percent). California opted out of the clean-fuel vehicle program by substituting a Low Emission Vehicle (LEV) program and an Urban Bus Program approved by EPA.⁴¹⁶

414. *See id.* For light-duty vehicles and light-duty trucks, the required percentage must be thirty percent in 1998, fifty percent in 1999, and seventy percent in 2000 and thereafter. *See id.* at § 7586(b). For heavy-duty trucks, the percentage must be 50 percent in each such year. *Id.* Light-duty vehicles and light-duty trucks in fleets participating in this program for the above model years must meet the low emissions vehicle (LEV) standards for model year 2001. *See id.* at § 7586(c). Fleet phase-in requirements for light-duty vehicles and light-duty trucks (6000 pounds Gross Vehicle Weight Rating [GVWR] or less) depend on the availability of qualifying vehicles in California by 1998 to 2000. 42 U.S.C. § 7586(c). If such vehicles are not available in California in advance of model year 2001, the phase-in schedules for these vehicles will be delayed accordingly. *Id.*

Some of the major program requirements include: (1) requirements for fuel providers to make clean alternative fuel available to fleet operators; (2) coverage of Federal fleets (except for certain vehicles certified by the Secretary of Defense as needing an exemption based on national security needs); and (3) provisions for issuing credits, consistent with EPA regulations due one year from enactment, for purchasing more vehicles than required or vehicles that meet more stringent standards or for purchasing vehicles prior to the effective date of the program. *See id.* at § 7587. Such credits may be banked and traded within the same nonattainment area, but credits may not be traded between light-duty and heavy-duty vehicle classes. *See id.* at § 7587(f)(2)(a).

The Administrator will promulgate rules under section 246(h) to ensure that certain TCMs that restrict vehicle usage based on time-of-day or day-of-week consideration will not apply to any vehicles that comply with the fleet program requirements, notwithstanding the relevant provisions of Title I. *Id.*

415. *See* 42 U.S.C. § 7586(a)(1) (2000).

416. *See* Approval and Promulgation of State Implementation Plans; California, 64 Fed. Reg. 46,849 (Aug. 27, 1999) (codified at 40 C.F.R. pt. 52) (qualifying LEV program as substitute for Clean Air Act Clean Fuel Fleet program).

§ 3(a)(3)(ix). *California Pilot Test Program*

By November 15, 1992, California had to submit a SIP revision requiring that sufficient clean alternative fuel be produced and distributed in California to support the title II, part C, section 249(c)⁴¹⁷ mandatory clean-fuel vehicle pilot program, which began in model year 1996. Sufficient fuel must be available to allow all vehicles covered by the program to operate on clean alternative fuel.⁴¹⁸ The SIP revision must provide for an adequate number of supply locations to be distributed to ensure convenient refueling of such vehicles in nonattainment areas, as well as in attainment areas within California.

§ 3(a)(3)(x). *Gasoline Vapor Recovery*

The Administrator may revise or waive the section 182(b)(3)⁴¹⁹ requirements for stationary source gasoline vapor recovery for serious, severe or extreme areas if she determines that onboard emissions control systems are in widespread use.

§ 3(a)(3)(xi). *Transportation Controls*

Section 182(c)(5)⁴²⁰ requires that six years after November 15, 1990, and at three year intervals thereafter, serious areas must analyze whether current aggregate vehicle mileage, aggregate vehicle emissions, congestion levels and other relevant parameters are consistent with those used for the area's demonstration of attainment. If the levels projected in the attainment demonstration are exceeded, the state has eighteen months to develop and submit a revision of its SIP. This plan must include transportation control measures (TCM) from, but not limited to, section 108(f)⁴²¹ that, in combination with other mobile source measures, will reduce emissions to levels that are consistent with emissions levels projected in the attainment demonstration.

§ 3(a)(3)(xii). *Reformulated Gasoline*

EPA must promulgate regulations prohibiting the sale of gasoline that is not reformulated. The prohibition is to apply in the

417. See 42 U.S.C. § 7589(c)(2)(a) (2000) (governing production and distribution of Clean Alternative Fuels).

418. See *id.* at § 7589(c) (mandating supply of clean alternate fuel).

419. See *id.* at § 7521(a)(6) (illustrating On Board Vapor Recovery implementation, standards and waiver).

420. *Id.* at § 7511a(c)(5).

421. See *id.*; see also 42 U.S.C. § 7408(f) (2000) (illustrating TCM's Administrator must promulgate information).

nine areas having the highest ozone design value during the 1987-1989 period and with 1980 populations over 250,000, and within one year, to any area reclassified as a severe ozone nonattainment area.⁴²² The effective date for prohibiting conventional gasoline being sold in these nonattainment areas was January 1, 1995. At the request of the Governor, the prohibition may be extended to any marginal, moderate, serious or severe ozone nonattainment area. Many serious areas opted into the reformulated gasoline program in order to demonstrate sufficient emission reductions to obtain approval of their SIP. Regulations concerning the reformulated gasoline program are found at 40 C.F.R. part 80 (2002).

§ 3(a)(3)(xiii). *Contingency Provisions*

Section 182(c)(9) requires adequate contingency measures for serious and above ozone nonattainment areas⁴²³ to correct any shortfall in meeting an emissions reductions milestone (e.g., the three percent average annual reduction required by late 1999). The contingency measures could be additional measures not already adopted to meet the RFP or other requirements, or the accelerated implementation of measures already planned to meet a future milestone.

§ 3(a)(4). *Severe Areas — Section 182(d)*⁴²⁴

Severe 1 ozone areas are those that exceed the ozone standard by fifty percent to fifty-eight percent (0.180 ppm up to but not including 0.190 ppm). Severe 2 areas exceed the standard by fifty-eight percent to 133 percent (0.190 ppm up to but not including 0.280 ppm). These areas must meet the primary NAAQS by November 15, 2005 or 2007 respectively. Severe areas are required to meet all serious area requirements, unless otherwise noted, as well as the following additional requirements.

§ 3(a)(4)(i). *Major Stationary Source Definition*

Any stationary source that emits or has the potential to emit at least twenty-five TPY.

422. See Clean Air Act § 211(k)(10)(D), 42 U.S.C. § 7545(k)(10)(D) (2000) (defining covered area); see also Regulation of Fuels and Fuel Additives: Standards for Reformulated and Conventional Gasoline, 59 Fed. Reg. 7716 (Feb. 16, 1994) (codified at 40 C.F.R. pt. 80) (stating EPA's final rule on reformulated gasoline).

423. See 42 U.S.C. § 7511a(c)(9) (2000) (requiring contingency measures in addition to those § 7507(c)(9) requires).

424. *Id.* at § 7511a(d).

§ 3(a)(4)(ii). *NSR — Offset Ratio*

For severe ozone nonattainment areas, the emissions offset ratio is at least 1.3 to 1 for VOCs, but if the SIP requires all existing major sources in the nonattainment area to use BACT, as defined in section 169(3), the ratio shall be at least 1.2 to 1.⁴²⁵

§ 3(a)(4)(iii). *Transportation Control Measures (TCMs) To Offset Increased Emissions From Growth In Vehicle Miles Traveled (VMT)*

States with severe ozone nonattainment areas had to submit SIP revisions by November 15, 1992, which identified and adopted “specific and enforceable transportation control strategies and TCMs to offset any increase in emissions from growth in VMT and in the number of vehicle trips” and complied with the emissions reduction and attainment requirements of the CAA.⁴²⁶ The TCM offset provisions apply only to emissions of VOCs. States, however, may wish to adopt similar offset goals for NO_x emissions from mobile sources where NO_x reductions help achieve attainment.

States choose and implement measures that are specified in section 108(f)⁴²⁷ to the extent needed to demonstrate attainment, but states are to ensure adequate access to downtown and other commercial and residential areas and should avoid measures that increase or relocate emissions and congestion rather than reduce them. EPA requires sufficient measures be adopted so that projected motor vehicle VOC emissions will not be higher during the ozone season than during the ozone season in the year before. Growth in VMT and vehicle trips that cause a motor vehicle emissions upturn must be prevented. The emissions level at the point of upturn becomes a ceiling on motor vehicle emissions. This requirement applies to projected emissions in the years between the submission of the SIP revision and the attainment deadline and is in addition to the requirements for the RFP and the attainment demonstrations.

425. See *id.* at § 7511a(d)(2) (illustrating desired ratio for offset requirements).

426. See *id.* at § 7511a(d)(1)(A) (requiring submission by November 15, 1992).

427. See *id.* at § 7408(f) (illustrating non-exhaustive TCM list).

§ 3(a)(4)(iv). *Employer Trip Reduction Program*

Section 182(d)(1)(B)⁴²⁸ requires that states with severe and extreme ozone non-attainment areas submit a SIP revision requiring employers with 100 or more employees in such areas to implement programs to reduce work-related vehicle trips and miles traveled by employees. As of the end of 1995, eleven states submitted employer trip reduction SIP revisions, and four were approved by EPA.⁴²⁹ Federal legislation was subsequently passed as H.R. 325 and signed into law by President Clinton on December 23, 1995,⁴³⁰ amending CAA section 182(d)(1)(B) to make employer trip reduction (ETR) programs optional. If a state chooses not to have an ETR program, it must designate alternative efforts to achieve equivalent emission reductions.⁴³¹

§ 3(a)(5). *Extreme Areas — Section 182(e)*⁴³²

This is an area that exceeds the ozone standard by more than 133 percent (0.280 ppm and above). These areas must meet the primary NAAQS by November 15, 2010. Los Angeles is the only extreme area.⁴³³

Extreme areas are required to meet all severe area requirements, unless otherwise noted, as well as the following additional requirements.

§ 3(a)(5)(i). *Major Stationary Source Definition*

Any stationary source that emits or has the potential to emit at least ten TPY.

§ 3(a)(5)(ii). *NSR*

(1) *Offset ratio.* The emissions offset ratio is at least 1.5 to 1 for VOCs, unless the state requires all existing major sources in the

428. 42 U.S.C. § 7511a(d)(1)(B) (2000) (noting other states also have discretion to submit revision).

429. See *Air Pollution: Bill to Make Employee Commute Option Voluntary Cleared by Commerce Committee*, Daily Env't Rep. (BNA), Nov. 30, 1995, at D-4.

430. See Pub. L. No. 104-70, 109 Stat. 773 (amending section 102(d)(1)(B) of CAA).

431. See Craig Oren, *Detail and Implementation: The Example of Employee Trip Reduction*, 17 VA. ENVTL. L.J. 123 (1998) (addressing problems posed by federal trip reduction mandate as enacted and as administered); see also Craig Oren, *Getting Commuters Out of Their Cars: What Went Wrong?*, 17 STAN. ENVTL. L.J. 141, 150-59 (1998) (examining failure of Employee Trip Reduction mandate).

432. 42 U.S.C. § 7511a(e) (2000).

433. See *Engine Mfr. Ass'n v. South Coast Air Quality Mgmt. Dist.*, brief of the United States, Sup. Ct. No. 02-1343, 7 (Aug. 2003).

nonattainment area to use BACT as defined in section 169(3), in which case the emissions offset ratio shall be at least 1.2 to 1.

(2) *Special NSR rules.* For the purposes of determining the applicability of the NSR permit requirements under section 173(a),⁴³⁴ the *de minimis* rule in section 182(c)(6)⁴³⁵ and the special rules in sections 182(c)(7) and (8),⁴³⁶ as discussed above for serious and severe areas, do not apply in extreme ozone nonattainment areas.

(3) *Modifications in extreme areas.* For modifications of major stationary sources located in extreme areas, the 1990 CAA Amendments eliminate the concept of *de minimis* altogether for the purposes of determining a major modification.

§ 3(a)(5)(iii). *Clean Fuels For Boilers*

Section 182(e)(3),⁴³⁷ "Use of Clean Fuels or Advanced Control Technology," applies to certain boilers in extreme ozone nonattainment areas.

§ 3(a)(5)(iv). *TCMs During Heavy Traffic Hours*

Section 182(e)(4)⁴³⁸ authorizes the SIPs for extreme areas to contain provisions establishing TCMs applicable during periods of heavy traffic that reduce the use of high polluting or heavy-duty vehicles.

§ 3(a)(5)(v). *New Technologies*

The Act recognizes that extreme areas may have to use new or evolving technologies to meet certain emissions reduction requirements. Section 182(e)(5)⁴³⁹ allows the Administrator to approve an extreme area SIP and attainment demonstration that anticipates development of new control technologies or improvement of existing control technologies if the SIP satisfies the criteria.

434. See 42 U.S.C. § 7503(a) (2000) (noting permit program required under § 7502(b)(6)).

435. See *id.* at § 7511a(c)(6) (finding *de minimis* increase when aggregate net emissions over five consecutive years are 25 tons or less).

436. See *id.* at § 7511a(c)(7), (8) (creating special rules for modifications of all major stationary sources of volatile organic compounds).

437. *Id.* at § 7511a(e)(3) (applying requirements to boilers emitting more than 25 tons per year of nitrous oxides).

438. *Id.* at § 7511a(e)(4).

439. 42 U.S.C. § 7511a(c)(5) (2000).

§ 3(a)(6). *Transport Areas*

Ozone transport primarily involves NO_x emissions which react with hydrocarbon emissions to produce ozone related pollution. Most NO_x emissions come from human activity, especially from motor vehicles and coal-fired electric power plants. Hydrocarbons also come primarily from human-related sources, but in much of the eastern United States,⁴⁴⁰ large amounts of natural (biogenic) hydrocarbons also are emitted from vegetation and trees. The large quantities of natural hydrocarbons in the eastern United States make reducing regional NO_x emissions important. Hydrocarbon reductions also can be effective in reducing ozone in those urban areas where hydrocarbons are a limiting factor in ozone production. In such areas, a combination of hydrocarbon and NO_x reductions will reduce ozone and its precursors in the controlled and downwind areas. Reductions of some hydrocarbons also will reduce air toxins and particulate matter.⁴⁴¹

The natural background of ozone is typically forty parts per billion (ppb) or less in North America, but, during the summer, ozone levels of sixty ppb or greater are found throughout the eastern United States. This is in part due to ozone produced in urban areas that is transported, along with its precursors, into rural areas. Ozone and its precursors also are formed in rural areas and transported downwind to urban areas.⁴⁴²

Section 176A⁴⁴³ allows the Administrator to establish a transport region covering multiple states whenever interstate transport of pollutants significantly contributes to violations of the NAAQS. Section 184(a)⁴⁴⁴ specifically created an ozone transport region comprising the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont and the Consolidated Metropolitan Statistical Area (CMSA) that includes the District of Columbia. Section 184(b)⁴⁴⁵ contains requirements applicable to states in the ozone transport region(s).

440. See Northeast States for Coordinated Air Use Management (NEW-SCAUM), *The Long-Range Transport of Ozone and Its Precursors in the Eastern United States* (1997).

441. See *id.*

442. See *id.*

443. 42 U.S.C. § 7506a(a) (2000) (providing procedures for establishing interstate transport region).

444. *Id.* at § 7511c(a) (noting that § 7506a(a)(1) and (2) apply).

445. *Id.* at § 7511c(b).

For states within ozone transport regions established under section 184(a), SIP revisions had to include specific measures by November 15, 1992. A state subsequently included in a transport region under section 176A has nine months from the date of inclusion to revise its SIP. A state within the transport region had to adopt a program pursuant to section 184(b)(1)(A),⁴⁴⁶ meeting the requirements of section 182(c)(3)'s⁴⁴⁷ enhanced I/M Program for any Metropolitan Statistical Area (MSA) (or portion of an MSA) within a state that has a population of 100,000 or more.

Each state in a transport region had to adopt VOC RACT regulations for sources located within that portion of the state included in a transport region. Under section 184(b)(1)(B),⁴⁴⁸ the RACT rules that apply to sources for which a CTG was issued before or after enactment had to be submitted by November 15, 1992.

Section 184(b)(2)⁴⁴⁹ required the Administrator to complete a study by November 15, 1993, identifying control measures capable of achieving emission reductions comparable to those achievable through vehicle refueling controls contained in section 182(b)(3).⁴⁵⁰ All states within a transport region were then required to adopt and submit a SIP revision with comparable measures or the Stage II vapor recovery measures, although moderate nonattainment areas located within an ozone transport region may be exempt from the section 182(b)(3) requirement after implementing onboard regulations.⁴⁵¹ Such areas remain subject to the transport requirement of section 184(b)(2).

Section 182(j)⁴⁵² defines a multi-state ozone nonattainment area as a single ozone nonattainment area that covers more than one state. Section 182(j)(1)(A) and (B)⁴⁵³ set certain requirements for such areas. First, each state in a multi-state ozone nonattainment area must take all reasonable steps to coordinate the implementation of the required SIP revisions for the given

446. *See id.* § 7511c(b)(1) (noting plan required by November 15, 1992).

447. *See id.* at § 7511a(c)(3) (reducing hydrocarbon and NOx emissions from motor vehicles).

448. 42 U.S.C. § 7511c(b)(1) (2000) (requiring submission by November 15, 1992).

449. *Id.* at § 7511c(b)(2) (requiring completion by November 15, 1993).

450. *See id.* at § 7511a(b)(3) (governing gasoline vapor recovery programs).

451. *See id.* at § 7521(a)(6) (noting that after Administrator promulgates appropriate standards, requirements of § 7511a(b)(3) "shall not apply" to moderate ones).

452. *Id.* at § 7511a(j) (requiring reasonable revision and implementation of state plans and at least photochemical grid modeling).

453. 42 U.S.C. § 7511a(j)(i)(A), (B) (2000).

nonattainment area.⁴⁵⁴ Next, section 182(j)(1)(B)⁴⁵⁵ requires the states to use photochemical grid modeling or any other equally effective analytical method approved by EPA for demonstrating attainment. EPA is prevented by section 182(j) from approving any SIP revision if a state has failed to meet these requirements.

§ 3(b). Carbon Monoxide

Moderate areas are those having a design value between 9.1 and 16.4 ppm of CO. They were to meet primary standards by December 31, 1995. Serious areas are those having design values of 16.5 ppm or above and had until December 31, 2000 to meet the primary standards.⁴⁵⁶

§ 3(b)(1). Moderate Areas 12.7 ppm And Below

Moderate CO areas had to submit a comprehensive, accurate, current inventory of actual emissions from all sources pursuant to the general requirements for nonattainment plans by November 15, 1992.⁴⁵⁷ CO nonattainment areas must submit periodic inventories, starting by September 30, 1995, and every three years thereafter until the area is redesignated to attainment.⁴⁵⁸

States with moderate CO nonattainment areas that were required by the pre-1990 Act to have I/M programs in their SIPs were to submit to EPA revisions to provide for a program no less stringent than that required prior to enactment or committed to in the SIP in effect at the time of enactment, whichever is more stringent.⁴⁵⁹ Requirements for these I/M programs are contained in section 182(a)(2)(B).⁴⁶⁰ States that have both basic and enhanced I/M areas may opt to implement enhanced programs in all affected urbanized areas.

454. *See id.* at § 7511a(j)(1)(A).

455. *Id.* at § 7511a(j)(1)(B).

456. *See id.* at § 7512(a)(1) (articulating classification method).

457. *See id.* The inventory is to address actual CO emissions during the peak CO season for the area (generally winter months). All stationary point, area, highway/nonhighway mobile and OCS sources (if any) are to be included in the compilation. 42 U.S.C. § 7512(a)(1) (2000).

Updated guidance for preparing emission inventories was issued in May 1991 in PROCEDURES FOR THE PREPARATION OF EMISSION INVENTORIES FOR CARBON MONOXIDE AND PRECURSORS OF OZONE, Vol. I (Revised).

458. *See* Clean Air Act § 187(a)(5), 42 U.S.C. § 7512a(a)(5) (2000). By meeting the specific periodic inventory requirements discussed above, the state will also satisfy the general periodic inventory requirements of section 172(c)(3).

459. *See id.* at § 7512a(a)(4) (requiring plan to include vehicle inspection and maintenance program).

460. *See id.* at § 7511a(a)(2)(B) (conveying requirements for I/M programs).

No attainment demonstration is required for moderate CO areas when the CO design value is 12.7 ppm or below. For CO area with design values at or below 12.7 ppm, contingency measures are needed to satisfy the provisions under section 172(c)(9)⁴⁶¹ and must be implemented if an area fails to attain by the applicable date. For areas with a design value above 2.7 ppm, the more specific contingency provisions of section 187(a)(3) concerning VMT apply.⁴⁶²

SIP revisions containing oxygenated fuel requirements must be submitted to EPA by any state containing all or part of a nonattainment area for CO with a design value of 9.5 ppm or above based on 1988 and 1989 data.⁴⁶³ Gasoline sold by retailers and wholesale purchasers/consumers in the nonattainment area must contain not less than 2.7 percent oxygen by weight. This oxygen content requirement also applies to gasoline sold or dispensed by refiners or marketers within the larger of the MSA/CMSA containing the nonattainment area.⁴⁶⁴

The NSR permit requirements of section 17⁴⁶⁵ apply in CO nonattainment areas. All moderate CO nonattainment areas had to submit proposed NSR programs in accordance with the requirements of sections 172(c)(5) and 173.⁴⁶⁶ The major stationary source threshold at 100 TPY for all moderate areas remained unchanged.

Section 186(b)(2)⁴⁶⁷ requires moderate CO nonattainment areas that fail to attain the standard to be reclassified to serious, subjecting them to the serious area requirements.⁴⁶⁸

461. See *id.* at § 7502(c)(9) (illustrating measures for nonattainment plans).

462. See *id.* at § 7512a(a)(3) (setting forth contingency provisions); see *infra* § 3(b)(2).

463. See Clean Air Act § 211(m), 42 U.S.C. § 7545(m)(1)(A) (2000). The design value calculation slightly differs for the various criteria pollutants. See EPA's Ozone and Carbon Monoxide Design Value Calculations Memorandum of June 18, 1990 (specifying how design value is calculated for ozone and carbon monoxide).

464. See Clean Air Act § 211(m), 42 U.S.C. § 7545(m)(1)(A) (2000). The statute provides for a waiver from oxygenated gasoline requirements under certain conditions. A waiver from the oxygenated gasoline requirements may be granted to a state which demonstrates to EPA's satisfaction that using oxygenated gasoline would prevent or interfere with the attainment by the area of a NAAQS or a state or local ambient air quality standard for any air pollutant other than CO. *Id.*

465. See *id.* at § 7503(a) (establishing permit requirements).

466. See *id.* at § 7502(c)(5) (requiring permits for new or modified major stationary sources constructed or operated in the nonattainment area).

467. *Id.* at § 7512(b)(2)(A).

468. See Clean Air Act § 186(a)(4) (2000) (allowing for up to two one-year extensions of attainment date granted for area if state has met all applicable re-

§ 3(b)(2). *Moderate Areas Above 12.7 ppm*

Moderate areas above 12.7 ppm must meet those requirements applicable to moderate areas below 12.7 ppm, as well as the following requirements. The SIP revision must include a forecast of VMT for each year before the attainment year.⁴⁶⁹ SIP revisions must provide for annual updates of the forecasts, annual reports on the extent to which the forecasts were accurate, and estimates of actual VMT in each year for which a forecast was required. SIP revisions are required to project attainment.⁴⁷⁰ Areas with design values above 12.7 ppm must implement contingency measures if any estimate of VMT in the nonattainment area, or any updated forecast of VMT contained in an annual report for any year prior to attainment, exceeds the number predicted in the most recent VMT forecast.⁴⁷¹ Contingency measures also must be implemented if the area fails to attain the NAAQS for CO by the attainment date, unless it is granted an extension. Contingency measures for CO areas with design values above 12.7 ppm were to be adopted pursuant to section 172(b).⁴⁷² Moderate or above CO nonattainment areas with a design value greater than 12.7 ppm are to implement enhanced I/M programs in urbanized areas, as defined by the Bureau of Census, within the nonattainment areas with 1980 populations of 200,000 or more. The plan must meet the requirements of section 182(c)(3) concerning enhanced I/M in serious and above ozone nonattainment areas.

§ 3(b)(3). *Serious Areas*

Serious CO nonattainment areas in which stationary sources contribute significantly to CO levels had to submit a SIP revision by

quirements contained in its implementation plan and NAAQS has been exceeded no more than once during year in which area was to have reached attainment).

469. *See id.* at § 187(a)(2), (7) (explaining need forecast).

470. *See id.* at § 187(a)(7) (noting requirement of project attainment).

471. *See id.* at § 187(a)(3) (highlighting need for contingency measures).

472. *See id.* at § 187(a)(6) (describing vehicle inspection in moderate areas). The 1990 Clean Air Act Amendments do not specify how many contingency measures are needed or the magnitude of emission reductions (or VMT reductions) they must provide. *See id.*

EPA believes that for exceedance of a VMT forecast, one appropriate choice of contingency measures would be to provide for the implementation of sufficient VMT reductions or emissions reductions to counteract the effect of one year's growth in VMT while the state revised its SIP (including VMT projections) to provide for attainment by the applicable date. *Id.* In other words, if VMT is expected to increase at a rate of two percent per year, the contingency measures under this alternative should be capable of reducing future VMT (or offsetting VMT growth) by two percent. *Id.*

November 15, 1992. The term "major stationary source" includes any stationary source that emits or has the potential to emit fifty tons per year or more of CO.⁴⁷³ Serious CO areas must adopt and implement enforceable TCMs to offset increased emissions from growth in VMT and in the number of vehicle trips in order to achieve necessary reductions in mobile source emissions.⁴⁷⁴ The most polluted city in the country for CO in 1990 was Denver; today, it is in attainment.⁴⁷⁵ The primary reason for this improvement is the better technology used on today's motor vehicles that allows them to meet emission standards at high altitudes.⁴⁷⁶ As of June 23, 2003, EPA has classified the following areas as serious for CO nonattainment status: Anchorage, AK; Fairbanks, AK; Las Vegas, NV; Los Angeles South Coast Air Basin, CA; Phoenix, AZ; and Spokane, WA.⁴⁷⁷

Section 246(a)(2)(B)⁴⁷⁸ requires CO nonattainment areas with 1980 populations of 250,000 or more and design values of 16.0 ppm or higher to submit SIP revisions providing for clean-fuel vehicle fleet programs by May 15, 1994.⁴⁷⁹ Serious CO areas covered by the clean-fuel vehicle fleet program (except for areas in New York State) must explain why any section 108(f) measure is not adopted, what proposed emission reduction measures will provide comparable reductions, or why such reductions are not necessary to attain the CO NAAQS.⁴⁸⁰

473. See Clean Air Act § 187(c)(1) (2000) (defining "major stationary service").

474. See *id.* at § 187(b)(2) (calling for adoption and implementation of TCMs).

475. See Tripp Baltz, *Once Saddled With Reputation for Dirty Air, Denver Rebounds to Meet All U.S. Standards*, 33 Env't Rep. (BNA) 1825 (Aug. 16, 2002) (noting most polluted city and its progress).

476. See Tripp Baltz, *EPA Redesignates Denver Metro Area After Carbon Monoxide Standard Met*, Daily Env't Rep. (BNA), Dec. 11, 2001, at A-4 (explaining possible reason for improvement).

477. See *Federal Register Notice: Clean Air Act Reclassification; Fairbanks Alaska, CO Nonattainment Act*, at <http://epa.gov/oar/oaqps/greenble/enc.html> (last visited August 10, 2003). This is not an official list of CO nonattainment areas. See also Designation of Areas for Air Quality Planning Purposes, 40 C.F.R. pt. 81(2003) (showing charts of attainment status and boundaries).

478. 42 U.S.C. § 7586(a)(2)(B) (2000) (noting that carbon monoxide attainment areas are covered areas).

479. See generally, Arnold W. Reitze, Jr., *Mobile Source Air Pollution Control*, 6 ENVTL. LAW. 309 (2000) (requiring certain areas to revise programs).

480. Section 246 defines "covered areas" as areas with a CO design value of 16 ppm or greater, excluding those areas in which mobile sources do not contribute significantly to CO exceedances.

Economic incentives and transportation control programs are required for serious areas under several different types of failure.⁴⁸¹ Within nine months of failure, a state must submit a SIP revision providing for at least a five percent per year reduction in CO emissions.⁴⁸²

§ 3(c). Particulate Matter

On November 15, 1990, PM₁₀ areas meeting the terms of section 107(d)(4)(B)⁴⁸³ were designated nonattainment by operation of law.⁴⁸⁴ After an area is designated nonattainment, section 188⁴⁸⁵ outlines the process for classifying the area and establishes the area's attainment date. All PM₁₀ nonattainment areas were initially classified as moderate. Section 188(b)(2)(A) requires EPA to reclassify an area from moderate to serious after the statutory attainment date of December 31, 1994 if the area is nonattainment for particulates.⁴⁸⁶ On May 10, 1996, EPA proposed to downgrade Phoenix, Arizona to serious.⁴⁸⁷ On May 14, 1996, the Ninth Circuit ruled that Arizona's SIP was deficient and should not have been approved by EPA because it failed to include measures to attain the twenty-four hour PM₁₀ standard.⁴⁸⁸ Four regions in southern California and Las Vegas were the only other areas designated as serious for particulates.⁴⁸⁹

481. These are failures to submit a milestone demonstration as defined in section 187(d)(1), failure to meet the milestone (section 187(d)(3)), or failure to attain the standard by the applicable attainment date (section 187(g)).

482. *See* Clean Air Act § 187(g), 42 U.S.C. § 7512a(g) (2000) (allowing up to nine months to revise SIP for greater reductions).

483. *See id.* at § 7407(d)(4)(B) (noting PM-10 designations).

484. *See* Designations and Classifications for Initial PM₁₀ Nonattainment Areas, 56 Fed. Reg. 11,101 (Mar. 15, 1991) (codified at 40 C.F.R. pt. 81) (announcing in Federal Register that all areas designated nonattainment for PM₁₀ at enactment of 1990 Clean Air Act Amendments and classified as moderate); *see also* Designations and Classifications for Initial PM₁₀ Nonattainment Areas, 56 Fed. Reg. 37,654 (Aug. 8, 1991) (codified at 40 C.F.R. pt. 81) (publishing subsequent notice correcting certain information in March 15, 1992 notice).

485. *See* 42 U.S.C. § 7513 (2000) (explaining classification and attainment dates for nonattainments areas).

486. *See id.* at § 7513(b)(2)(A); *see id.* at § 7513(c)(1) (noting statutory requirement to reclassify).

487. *See generally* Clean Air Act Reclassification; Arizona-Phoenix Nonattainment Area; PM₁₀, 61 Fed. Reg. 21,372 (May 10, 1996) (codified at 40 C.F.R. pt. 81) (noting Arizona's progress).

488. *See Ober v. EPA*, 84 F.3d 304 (9th Cir. 1996) (noting Court of Appeals reversed EPA).

489. *See Arizona: EPA Downgrades Phoenix Air to Serious; Growth Has Stymied Anti-Pollution Efforts*, Daily Env't Rep. (BNA), May 14, 1996, at B-1 (noting other areas with serious particulate levels).

On May 30, 1996, an EPA memorandum to the regional offices stated that violations of the particulate matter standard will not be used to determine whether an area is in attainment if the violations result from natural events. Three types of natural events are subject to exclusion: (1) volcanic or seismic activities; (2) wild land fires requiring suppression; (3) and high winds that move dust from a non-anthropogenic source or from an anthropogenic source that has best available control measures in place.⁴⁹⁰

States had to submit a SIP revision within eighteen months for moderate PM₁₀ areas designated nonattainment upon enactment of the 1990 CAA Amendments. An NSR program for these areas was due June 30, 1992.⁴⁹¹ Section 189(a)(1)(B)⁴⁹² requires states with moderate PM₁₀ nonattainment areas to submit a demonstration (including air quality modeling) showing attainment by the applicable attainment date.⁴⁹³ Under section 189(c),⁴⁹⁴ the PM₁₀ nonattainment area SIPs must include quantitative emission reductions milestones to be achieved every three years and which demonstrate RFP, as defined in section 171(1),⁴⁹⁵ until the area is redesignated attainment. The states must demonstrate to EPA that the SIP measures are being implemented, and the milestones have been met, within ninety days after the milestone date. EPA must then determine whether or not the state's demonstration is adequate within ninety days of receiving the demonstration. The state also is required to submit a SIP revision if it fails to submit the quantitative milestone demonstration or if EPA determines that a milestone was not met. The SIP revision must assure that the state will achieve the next milestone by the applicable date and/or meet the PM₁₀ attainment date if there is no next milestone.

Moderate area SIPs must contain reasonably available control measures (RACM) for the control of PM₁₀ emissions.⁴⁹⁶ Section 172(c)(1) of the amended Act, in turn, provides that RACM for

490. See Alec C. Zaracoli, *Air Pollution: Particulates Generated by Natural Events Discounted from Attainment Determinations*, Daily Env't Rep. (BNA), June 10, 1996, at A-2 (noting areas subject to exclusion).

491. See Clean Air Act § 189(a)(2), 42 U.S.C. § 7513a(a)(2) (2000) (noting program due dates).

492. *Id.* at § 7513a(a)(1)(B) (discussing plan provisions).

493. See *id.* (noting demonstration showing attainment by date). In general, attainment demonstrations for the initial moderate nonattainment areas should follow the existing modeling guidelines addressing PM₁₀ (e.g., "PM₁₀ SIP Development Guideline" EPA-45012-86-001 (June 1987)). See *id.*

494. *Id.* at § 7513a(c) (discussing plan milestones).

495. See 42 U.S.C. § 7501(1) (2000) (defining reasonable further progress).

496. See *id.* at § 7513a(a)(1)(C) (explaining need for central measures).

nonattainment areas shall include “such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology.”⁴⁹⁷ Thus, moderate area PM₁₀ SIPs are to include RACM and RACT for existing sources of PM₁₀ emissions.

States having areas that are reclassified as serious must submit SIPs containing best available control measures (BACM)⁴⁹⁸ for urban fugitive dust, residential wood combustion and prescribed silvicultural and agricultural burning.⁴⁹⁹ The SIPs containing BACM/RACM provisions must be submitted within eighteen months after the affected area is reclassified as serious⁵⁰⁰ and implemented no later than four years after being reclassified.⁵⁰¹ For serious areas, a major stationary source is one that has the potential to emit seventy tons per year of PM₁₀.⁵⁰² Section 190⁵⁰³ requires that EPA also take into account the emission reductions achieved or expected to be achieved under subchapter IV and other provisions in issuing RACM and BACM guidelines and making determinations.

Section 189(e)⁵⁰⁴ provides that, for all PM₁₀ nonattainment areas, the control requirements applicable under PM₁₀ SIPs also apply to major stationary sources of PM₁₀ precursors, except where EPA determines that such sources do not contribute significantly to PM₁₀ levels that exceed the PM₁₀ NAAQS in the area. In considering the reductions to be achieved by controlling PM₁₀ precursors under section 189(e),⁵⁰⁵ Congress indicated that EPA should take into account reductions achievable from control requirements imposed by other sections of the CAA.

§ 3(d). Sulfur Dioxide

States with existing nonattainment areas for the primary SO₂ NAAQS that lacked fully approved SIPs, including part D plans, had

497. *Id.* at § 7502(c)(1) (explaining reductions should come from reasonably available control technology).

498. *See id.* at § 7513a(b)(1)(B) (explaining acronym “BACM”).

499. *See id.* at § 7513b (noting need for best available central measures for reclassified areas).

500. *See* Clean Air Act § 189(b)(2), 42 U.S.C. § 7513a(b)(2) (2000) (explaining time limits on SIPs).

501. *See id.* at § 7513a(b)(1)(B) (explaining time limit for implementation).

502. *See id.* at § 7513a(b)(3) (explaining major stationary source).

503. *See id.* at § 7513b (2000) (describing RACM and BACM procedure).

504. *See id.* at § 7513a(e) (discussing PM-10 precursors have same standard as PM-10s themselves with one exception).

505. *See* 42 U.S.C. § 7513a(e) (2000) (noting what EPA should consider).

to submit implementation plans by May 15, 1992.⁵⁰⁶ States with areas that are designated or redesignated after November 15, 1990 as nonattainment areas for the primary SO₂ NAAQS must submit implementation plans within eighteen months of the designation or redesignation.⁵⁰⁷ The 1990 CAA Amendments require attainment of both the primary and secondary NAAQS “as expeditiously as practicable.”⁵⁰⁸ The statute specifies that⁵⁰⁹ areas designated nonattainment on November 15, 1990 had to attain the primary NAAQS by November 15, 1995.⁵¹⁰ Areas redesignated as nonattainment, subsequent to the November 15, 1990 date of enactment, must attain the primary NAAQS “as expeditiously as practicable,” but not later than five years after the nonattainment designation.⁵¹¹ If, subsequent to a plan’s approval, EPA finds that such a plan is substantially inadequate, the plan must be revised to provide for attainment of the primary NAAQS within five years from the finding of inadequacy.⁵¹²

Areas which are nonattainment for the secondary SO₂ NAAQS may be allowed additional time for attainment beyond the deadlines mandated for the primary NAAQS. In general, EPA will rely on the provisions of 40 C.F.R. § 51.340 (subpart R) to determine expeditiousness. The 1990 CAA Amendments did not significantly change the plan requirements for SO₂ nonattainment areas.⁵¹³ For this reason, states generally may continue to rely on past guidance for SO₂ programs.⁵¹⁴ SO₂ RACT is defined as the technology necessary to achieve NAAQS; therefore, control technology which failed to achieve the SO₂ NAAQS would, by definition, fail to be SO₂ RACT.

Section 171(1) defines “reasonable further progress” (RFP) as “such annual incremental reductions in emissions of the relevant air pollutant as are required by this part [part D] or may reasonably be required by EPA for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date.”⁵¹⁵ This definition is less pertinent to pollutants such as SO₂.

506. *See id.* at § 7514(b) (explaining deadline to submit plans).

507. *See id.* at § 7514(a) (noting different time limits).

508. *See id.* at § 7502(a)(2)(A), (B) (disengaging delay in attainment).

509. *See id.* at § 7514a (noting attainment date).

510. *See* Clean Air Act § 192(b), 42 U.S.C. § 7514a(b) (2000) (noting deadline).

511. *See id.* at § 7514a(a) (noting more deadlines).

512. *See id.* at § 7514a(c) (noting provision for inadequate plans).

513. *See id.* at § 7502 (noting no significant change).

514. *See generally id.* at §§ 7501-7508 (noting past guidance still applicable).

515. 42 U.S.C. § 7501 (2000) (defining RFP).

which usually have a limited number of sources, relatively well-defined relationships between individual sources and air quality, and emissions control measures that can be used to produce swift improvement in air quality. EPA construes RFP as “adherence to an ambitious compliance schedule.”

Section 172(c)(9)⁵¹⁶ of the amended Act defines contingency measures as measures in a SIP to be implemented if an area fails to make the RFP or fails to attain the NAAQS by the applicable attainment date. EPA interprets the contingency measure provisions as primarily directed at general programs that can be undertaken on an area-wide basis. Because SO₂ control measures are based upon what is necessary to attain the SO₂ NAAQS, it would be unlikely for an area to implement the necessary emissions control yet fail to attain the NAAQS. For SO₂ programs, therefore, EPA interprets “contingency measures” to mean that the state agency has a comprehensive program to identify sources of SO₂ NAAQS violations and to undertake an aggressive follow-up for compliance and enforcement. This follow-up includes expedited procedures for establishing enforceable consent agreements pending the adoption of revised SIPs.

§ 3(e). Lead

The 1990 CAA Amendments in section 107(d)(5)⁵¹⁷ authorize EPA to require states to designate areas (or portions thereof) as nonattainment, attainment or unclassifiable with respect to the lead NAAQS in effect as of November 15, 1990. As provided in section 107(d)(5), these lead areas are to be designated pursuant to the procedures outlined in section 107(d)(1)(A) and (B).⁵¹⁸

EPA is authorized to classify areas designated as nonattainment for the purposes of applying an attainment date pursuant to section 172(a)(2)⁵¹⁹ or for other reasons.⁵²⁰ Section 192(a)⁵²¹ specifically provides an attainment date for areas designated as nonattainment for the lead NAAQS in effect at the date the 1990 CAA Amend-

516. *See id.* at § 7502(c)(9) (noting plans shall provide for contingency measures).

517. *See id.* at § 7407(d)(5) (discussing designations for lead).

518. *See id.* at § 7407(d)(1)(A) (noting submissions of initial designations following revised standards).

519. *See id.* at § 7502(a)(2) (describing requirements for attainment dates of nonattainment areas).

520. *See Clean Air Act* § 172(a)(1)(A), 42 U.S.C. § 7502(a)(1)(A) (2000) (noting classification pursuant to rules).

521. *See id.* at § 7514a(a) (noting implementation plan requirements).

ments were enacted. Although EPA has legal authority to classify lead nonattainment areas, the five-year attainment date under section 192(a) cannot be extended pursuant to section 172(a)(2)(D),⁵²² and EPA deemed it inappropriate to establish a classification scheme within the five-year interval.

For areas designated nonattainment for the primary lead NAAQS in effect when the 1990 CAA Amendments were enacted, states had to submit SIPs which met the applicable requirements of part D of the Act within eighteen months of an area's nonattainment designation.⁵²³ SIPs must provide for attainment of the lead NAAQS as expeditiously as practicable, but no later than five years from the date of an area's nonattainment designation.⁵²⁴ EPA's SIP requirements for controlling lead are found in 40 C.F.R. § 51.117.

§ 3(f). Nitrogen Dioxide

The South Coast Air Basin of California was the only designated NO₂ nonattainment area in the nation. The basin was designated nonattainment by operation of law⁵²⁵ and was required to attain the primary standard by November 15, 1995.⁵²⁶ The South Coast is no longer listed as nonattainment for NO₂.⁵²⁷

§ 4. CONFORMITY

Each state has considerable discretion to decide what categories and subcategories of sources will be required to reduce emissions, and how much each subcategory will have to reduce emissions. Thus, there is considerable engineering, political and economic analysis by state and local government decision-makers in deciding how to allocate the necessary emission reduction requirements. The CAA's transportation conformity provisions involve the portion of the emissions budget that is allocated to the transportation sector.

522. *See id.* at § 7502(a)(2)(D) (stating provisions limitations).

523. *See id.* at § 7514(a) (explaining time limit for submitting SIPs meeting Part D requirements).

524. *See id.* at § 7514a(a) (noting time limit for attainment of lead NAAQS).

525. *See* Clean Air Act § 107(d)(1)(C), 42 U.S.C. § 7407(d)(1)(C) (2000) (refining to operation of law).

526. *See id.* at § 7514a(b) (noting time limits).

527. *See* Designation of Areas for Air Quality Planning Purposes: Section 107 Attainment Status Designations: California, 40 C.F.R. § 81.305 (2003) (noting South Coast Air Basin of California is no longer listed as NO_x nonattainment).

The 1970 CAA Amendments required SIPs to include land-use and transportation controls.⁵²⁸ SIPs were to provide, to the extent necessary and practicable, for periodic inspection and testing of motor vehicles.⁵²⁹ In addition, the Federal-Aid Highway Act of 1970⁵³⁰ required highway projects to be "consistent" with air quality plans adopted by the states.⁵³¹ In 1975, EPA and the Federal Highway Administration (FHWA) jointly issued guidelines concerning the requirements of section 109(j) of the Federal-Aid Highway Act.⁵³² The guidelines listed five criteria by which transportation plans and programs demonstrate consistency with SIPs.⁵³³ These criteria are similar to the definition of conformity found in section 176(c) of the 1990 CAA Amendments.⁵³⁴ The development of a transportation control plan by a state under the 1970 Act was un-

528. See Clean Air Act, Amendments of 1970, Pub. L. No. 91-604, § 4(a), § 110(a)(2)(B), 84 Stat. 1676, 1680 (repealed by Clean Air Act Amendments of 1990 § 101(b), 104 Stat. 2394, 2404) (codified at 42 U.S.C. § 7410(a)(2)) (substituting new plan requirements).

529. See Pub. L. No. 91-604, § 4(a), § 110(a)(2)(G), 84 Stat. 1676, 1681 (repealed by Clean Air Act Amendments of 1990 § 101(b), 104 Stat. 2399, 2404) (providing for inspection and testing).

530. Federal-Aid Highway Act of 1970, Pub. L. No. 91-605, 84 Stat. 1713 (codified in scattered sections of 23 U.S.C.).

531. See *id.* at § 136, 84 Stat. 1713, 1735 (codified at 23 U.S.C. § 109(j)) (requiring highway projects to meet air quality plans).

532. See Arnold W. Reitze, Jr., *Improving Transportation-Related Air Quality Under the Clean Air Act's Conformity Requirements and the Intermodal Surface Transportation Efficiency Act of 1991*, 3 ENVTL. LAW. 631, 641 (1997) (citing FEDERAL HIGHWAY ADMINISTRATION AND U.S. ENVTL. PROTECTION AGENCY, GUIDELINES FOR ANALYSIS OF CONSISTENCY BETWEEN TRANSPORTATION AND AIR QUALITY PLANS AND PROGRAMS (1975)) [hereinafter INTERMODAL SURFACE] (noting jointly issued guidelines).

533. See *id.* at 16-17 (noting criteria to demonstrate SIP consistency). The five criteria are:

1. The MPO [Metropolitan Planning Organization] transportation plans and programs must not exacerbate existing violations of NAAQS.
2. The MPO transportation plans and programs must not contribute to a violation of NAAQS for a pollutant for which no concentrations in violation of standards have been measured.
3. The MPO transportation plans and programs must not delay the attainment of the NAAQS.
4. The MPO transportation plans and programs must not interfere with maintenance of NAAQS, once the standards are attained.
5. The MPO transportation plans and programs must include all appropriate portions of State plans to implement NAAQS.

Id.; see also *Envtl. Def. Fund, Inc. v. Browner*, 1995 WL 91324, at *6 (N.D. Cal. Feb. 10, 1995) (applying five criteria).

534. Compare INTERMODAL SURFACE, *supra* note 532, at 16-17, with 42 U.S.C. § 7506(c) (1994) (defining conformity). The definition was also similar to the EPA's 1987 proposed call for SIP revisions for areas that failed to meet 1987 NAAQS deadlines. Cf. State Implementation Plans; Approval of Post-1987 Ozone and Carbon Monoxide Plan Revisions for Areas Not Attaining the National Ambient Air Quality Standards; Notice, 52 Fed. Reg. 45,044, 45,099 (November 24, 1987) (noting conformity definition).

sual, however, and the Department of Transportation (DOT) did not require air quality reviews of regional transportation plans.⁵³⁵

The 1977 CAA Amendments required states to revise their SIPs if they contained areas not expected to attain the primary national ambient air quality standards (NAAQS) for CO or ozone (photochemical oxidants) by July 1, 1979.⁵³⁶ The SIP was to be coordinated with the "continuing, cooperative, and comprehensive (3C) transportation planning process required by 23 U.S.C. § 134 and 49 U.S.C. § 5303 and the air quality planning process found in CAA section 108."⁵³⁷ State air quality agencies, however, often lacked meaningful control over transportation planning requirements.⁵³⁸ Other federal agencies responsible for maintaining programs with air quality related transportation consequences were required to use their authority consistent with the need to attain the NAAQS,⁵³⁹ but this responsibility was defined narrowly.⁵⁴⁰ To assist federal agencies and the states, Congress required EPA to produce information on a variety of transportation control measures (TCMs) that could reduce automotive air pollution.⁵⁴¹ States could use this information to prepare the required SIP revisions providing for implementing, maintaining and enforcing the primary standards.⁵⁴² The mix of air pollution control measures used in the SIP, however, was largely left to the states.⁵⁴³ For areas redesignated as attain-

535. See INTERMODAL SURFACE, *supra* note 532, at 642 (citing Robert E. Yuhnke, *Clean Air in Our Times? The Amendments to Reform Transportation Planning In The Clean Air Act Amendments of 1990*, TRB LEGALWORKSHOP, July 23, 1991, at 2, 3) (noting why control plan was unusual).

536. See Clean Air Act Amendments of 1977, Pub. L. No. 95-95, §§ 129(b), 174(a), 91 Stat. 685, 749 (codified in 42 U.S.C. §§ 7502, 7504) (noting more time limits).

537. See *id.* at §§ 129(b), 174(b), 91 Stat. 685, 749 (explaining coordination between SIPs and transportation planning process).

538. See *id.* at §§ 125, 128, 91 Stat. 685, 725 (notifying lack of control of state air quality agencies).

539. See *id.* at §§ 129(b), 176(d), 91 Stat. 685, 750 (codified as amended in 42 U.S.C. § 7506(d) (2000)) (explaining federal agencies were required to act consistently with goals).

540. See *id.* (noting narrow scope of responsibility).

541. See Clean Air Act Amendments of 1977, Pub. L. No. 95-95, §§ 105, 108(f), 91 Stat. 689-90, (codified as amended at Clean Air Act § 108(f), 42 U.S.C. § 7408(f) (2000)) (allowing for greater guidance to federal and state agencies).

542. See *id.* at §§ 108(a), 110(a), 91 Stat. at 693-97 (codified as amended in 42 U.S.C. § 7410(a) (2000)) (showing application deadlines).

543. See Clean Air Act § 108(f), 42 U.S.C. § 7408(f) (2000). Clean Air Act section 108(f)'s list of TCMs created a legal controversy as to whether a state must adopt all of the listed control measures or only those it considers appropriate. *Id.* In *Delaney v. EPA*, the U.S. Court of Appeals for the Ninth Circuit held that a state can reject a measure only if the measure would not advance attainment, would cause substantial adverse impact or would take too long to implement. See 898

ment, the state had to develop air quality maintenance plans and submit them to EPA for approval.⁵⁴⁴ These air quality maintenance requirements are now found in CAA section 175A.

In the 1977 CAA Amendments, Congress expanded the concept of air quality planning by adding a new conformity provision, section 176(c).⁵⁴⁵ It provided:

[n]o department, agency, or instrumentality of the Federal Government shall (1) engage in, (2) support in any way or provide financial assistance for, (3) license or permit, or (4) approve, any activity which does not conform to a plan after it has been approved or promulgated under [section 7410 of this title]. No metropolitan planning organization designated under section 134 of Title 23, shall give its approval to any project, program, or plan which does not conform to a plan approved or promulgated under section 7410 of this title. The assurance of conformity to such a plan shall be an affirmative responsibility of the head of such department, agency, or instrumentality.⁵⁴⁶

When Congress added this conformity requirement, it provided little guidance regarding what conformity meant.⁵⁴⁷ Congress viewed this provision as a sanction against recalcitrant states and local governments, rather than as a planning tool to address the contribution transportation sources made to an area's nonat-

F.2d 687, 692 (9th Cir. 1990). The 1990 Clean Air Act Amendments did not explicitly address the issue of whether a nonattainment area had to adopt all reasonably available control measures. See 136 CONG. REC. S16,971 (daily ed. Oct. 27, 1990). In its 1992 proposed rulemaking on SIPs, EPA explained that the *Delaney* case does not prevent EPA from revising its "reasonably available control measures" (RACM) guidance in the future. See State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 13,498, 13,561 (Apr. 16, 1992) (codified at 40 C.F.R. pt. 52). EPA contended that it could alter its past guidance consistent with a reasonable interpretation of statutory requirements in light of historical experience implementing TCMs. See *id.* Thus, the federal courts will most likely follow EPA's guidance that eliminates the presumption that all TCMs are reasonably available.

544. See Clean Air Act Amendments of 1977, §§ 108(a)(2), 110(a)(2)(B), 91 Stat. 693 (1977) (codified as amended in 42 U.S.C. § 7410(a) (2000)) (noting state plans must be approved by EPA).

545. See *id.* at §§ 129, 176(c), 91 Stat. 750 (codified as amended at 42 U.S.C. § 7506(c) (2000)) (explaining air quality concept).

546. *Id.* (describing conformity requirements).

547. See H.R. REP. NO. 95-294, at 5 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1082-83 (discussing penalties for non-compliance).

tainment status.⁵⁴⁸ In June 1980, EPA and DOT produced a guidance document defining conformity as transportation plans and programs that do not adversely affect the TCMs in a SIP.⁵⁴⁹ A transportation project conformed if it was a TCM from a SIP, came from a conforming transportation improvement program (TIP),⁵⁵⁰ or did not adversely affect the TCMs in the SIP.⁵⁵¹ DOT subsequently issued this guidance document as an interim final rule.⁵⁵²

§ 4(a). Conformity Provisions Of The 1990 CAA Amendments

The 1990 CAA Amendments continued the 1977 approach for controlling ozone and CO, but were more specific concerning what the states must do and how they must shape their SIP revisions. The Amendments expanded and updated the list of TCMs in section 108(f),⁵⁵³ which the EPA was required to produce guidance for use by state and local governments. They also repealed some of the 1977 restrictions on the use of transportation controls.⁵⁵⁴ Congress gave the Secretary of Transportation and the Administrator of EPA increased responsibility for reporting and evaluating how transportation planning could be used to improve air pollution control.⁵⁵⁵ CAA section 182 specifically requires various TCMs in ozone nonat-

548. *See id.*; *see also* S. REP. NO. 101-228, at 26-27 (1989), *reprinted in* 1990 U.S.C.C.A.N. 3385, 3412 (discussing governor's ultimate responsibility to implement revised plan for individual state).

549. *See Air Quality Conforming and Priority Procedures for Use in Federal-Aid Highway and Federally Funded Transit Programs*, 46 Fed. Reg. 8426 (Jan. 26, 1981) (codified at 23 C.F.R. pt. 770, 49 C.F.R. pt. 623) (establishing definition of conformity).

550. *See id.* A TIP is "a staged, multi-year, intermodal program of transportation projects covering a metropolitan planning area which is consistent with the metropolitan transportation plan and developed pursuant to 23 C.F.R. part 450." 40 C.F.R. § 93.101 (2003).

551. *See Air Quality Conforming and Priority Procedures for Use in Federal-Aid Highway and Federally Funded Transit Programs*, 46 Fed. Reg. at 8426 (defining qualifying projects).

552. *See id.* The rule amended 23 C.F.R. pt. 770 (FHWA Air Quality Guidelines) and added 49 C.F.R. pt. 623 (Urban Mass Transit Administration (UMTA) Air Quality Conformity and Priority Procedures).

553. *See Clean Air Act Amendments of 1990*, Pub. L. No. 101-549, § 108(b), 104 Stat. 2399, 2465 (codified as amended at Clean Air Act § 108(f), 42 U.S.C. § 7408(f) (2000)) (expanding and revising TCMs).

554. *See id.* at § 101, 104 Stat. 2409 (repealing Clean Air Act § 110(c)(2)(A), (c)(2)(C), (c)(4), (d), (e), 42 U.S.C. § 7410(c)(2)(A), (c)(2)(C), (c)(4), (d), (e) (2000)) (relaxing 1977 restrictions for transportation controls).

555. *See id.* at §§ 111, 108(f)(3)-(4), 104 Stat. 2470 (codified as amended in 42 U.S.C. § 7408(f)(3)-(4) (2000)) (outlining reporting requirements).

tainment areas,⁵⁵⁶ and section 187 requires various TCMs for CO nonattainment areas.⁵⁵⁷

CAA section 176(c)(1) continues the pre-1990 version of conformity, known as the general conformity provision, but adds a definition of conformity.⁵⁵⁸ Section 176(c)(1) defines conformity as:

- (1) conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and
- (2) that such activities will not
 - (i) cause or contribute to any new violation of any standard in any area;
 - (ii) increase the frequency or severity of any existing violation of any standard in any area; or
 - (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

Determining conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel and congestion estimates as determined by the metropolitan planning organization or other agency authorized to make such estimates.⁵⁵⁹

Sections 176(c)(2) and (3) create a comprehensive transportation conformity program. Section 176(c)(2) prohibits the emissions from transportation projects and plans from exceeding the quantities allowed in the SIP,⁵⁶⁰ and section 176(c)(3) establishes requirements for interim conformity determinations that apply until a state revises its SIP to include criteria and procedures for determining transportation conformity.⁵⁶¹ Section 176(c)(4) provides direction to EPA concerning the promulgation of regulations to implement the conformity requirements.⁵⁶² Section 176(d) provides

556. *See id.* at §§ 103, 182(a)(2)(A), 104 Stat. 2426 (codified as amended in 42 U.S.C. § 7511a(a)(2)(A) (2000)) (listing specific TCM requirements).

557. *See id.* at §§ 104, 187(a)(3), 104 Stat. 2454 (codified as amended in 42 U.S.C. § 7512a(a)(3) (2000)) (listing CO limits).

558. *See* Clean Air Act Amendments of 1990 § 110, 104 Stat. 2470 (codified as amended at Clean Air Act § 176(c), 42 U.S.C. § 7506(c) (2000)).

559. *See* Clean Air Act § 176(c)(1), 42 U.S.C. § 7506(c)(1) (2000) (explaining calculation of conformity).

560. *See id.* at § 7506 (c)(2) (addressing SIP requirements).

561. *See id.* at § 7506 (c)(3) (explaining States may use criteria and procedures developed by EPA or may create their own more stringent standards).

562. *See id.* at § 7506(c)(4) (instructing EPA how to implement regulations).

that each federal agency with authority over any program with air quality related transportation consequences shall give priority to such responsibilities.⁵⁶³

The legislative history of the conformity provisions states that the objective of section 176 is "to promote the adoption and implementation of policies to reduce vehicle use in nonattainment areas."⁵⁶⁴ To accomplish this, Congress wanted federal transportation investments in nonattainment areas to focus on transportation programs that "provide alternatives to the single occupancy vehicle and that contribute to reducing future VMT (vehicle miles traveled)."⁵⁶⁵ This objective includes programs to encourage high vehicle occupancy, shared rides, and facilities that help curtail the growth of VMT.⁵⁶⁶ The legislation's goal is to ensure that federal funds are spent on programs that reduce VMT within nonattainment areas.⁵⁶⁷

§ 4(b). General Conformity

The 1977 CAA conformity requirements, applicable to all federal and federally-assisted activities, continue today as the general conformity requirements. They require federal agencies to withhold financial assistance, licenses, permits and other approvals for proposed new activities unless the projected emissions from the activities conform to the applicable CAA implementation plan used to

563. See *id.* at § 7506(d). This subsection duplicates the 1977 version except for the minor change that the reference to the Urban Mass Transportation Act is now to the Federal Transit Act. See 49 U.S.C. §§ 5301-5338 (1994).

564. S. REP. NO. 101-228, at 27 (1989), *reprinted in* 1990 U.S.C.C.A.N. 3385, 3413. The legislative history of the 1990 Amendments includes a detailed explanation of transportation conformity, in response to Congress' failure in the 1977 Amendments to elaborate on what "conformity" meant. See *generally id.* Senate Bill 1630 introduced the 1990 conformity amendments. *Id.* at 3387. Senator Baucus, the bill manager and chair of the subcommittee that reported the bill, commented in a summary of the bill inserted into the *Congressional Record* that "the conformity provision added to the Clean Air Act in 1977 was to give clear legislative authority for the application of air quality criteria to the review and approval of transportation plans, as well as projects, in accordance with the DOT and EPA joint 1975 guidance." 36 CONG. REC. S16,972, col. 2 (daily ed. Oct. 27, 1990).

565. See S. REP. NO. 101-228, at 26, *reprinted in* 1990 U.S.C.C.A.N. at 3412 (focusing on transportation alternatives to single car).

566. See *id.* (discussing types of programs established).

567. See *id.* at 26-27, *reprinted in* 1990 U.S.C.C.A.N. at 3412-13 (discussing regulation's ultimate goal).

control air pollution.⁵⁶⁸ EPA promulgated regulations to implement this provision on November 30, 1993.⁵⁶⁹

The 1990 General Conformity Rule,⁵⁷⁰ based on CAA section 176(c)(1),⁵⁷¹ applies to projects that require federal action,⁵⁷² but it does not apply to actions that are subject to the transportation conformity requirements.⁵⁷³ Transportation conformity, discussed *infra*, applies to highway construction and mass transit.⁵⁷⁴ A myriad of federal activities, including Army Corps of Engineers wetland permits, Department of the Interior leases of federal lands, and Housing and Urban Development (HUD) grants for urban development projects, may require general conformity findings. Indirect sources such as shopping malls, sports stadiums and theme parks may be subject to general conformity review as part of the federal permitting or funding process needed to build these motor vehicle magnets.⁵⁷⁵

General conformity requirements ensure that federal assistance is provided only to a project that complies with the applicable SIP.⁵⁷⁶ The states incorporate the general conformity requirements into air quality planning efforts,⁵⁷⁷ but a state may establish a con-

568. See Clean Air Act § 176(c)(1), 42 U.S.C. § 7506(c)(1) (2000) (addressing how funds are withheld unless environmental standards are met).

569. See Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 58 Fed. Reg. 63,214 (Nov. 3, 1993) (codified at 40 C.F.R. pts. 6, 51, 93) (2003). The rule includes requirements applicable to states that have revised their SIPs to handle general conformity requirements at 40 C.F.R. pt. 51 subpt. W. *Id.* It also contains nearly identical provisions at 40 C.F.R. pt. 93 that apply until the states revise their SIPs. *Id.*

570. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.850-860 (2003) (discussing general conformity rule).

571. See 42 U.S.C. § 7506(c)(1) (2000) (defining conformity guidelines).

572. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.853(b) (2003) (applying to projects involving federal action).

573. See *id.* at § 51.853(a) (exempting actions subject to transportation conformity requirements).

574. See *id.* at § 93.100(a) (discussing what transportation conformity applies to).

575. But see *id.* at § 51.853(c) (2003) (addressing indirect sources).

576. See *id.* at § 51.851(b) (discussing purpose of general conformity requirements).

577. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.851(a) (2003) (incorporating air quality plans by states).

formity program that is more stringent than federal requirements if the program applies to non-federal, as well as federal entities.⁵⁷⁸

The General Conformity Rule places the responsibility to determine whether an action conforms to the SIP on the agency performing the action,⁵⁷⁹ and it establishes the requirements necessary to make a legally sufficient conformity finding.⁵⁸⁰ If a general conformity finding is required, the federal agency must determine whether the following requirements have been met:

(1) The federal agency making the conformity determination must find that the federal action conforms to the SIP.⁵⁸¹ No federal action may:

- (i) cause or contribute to any new violation of any standard in any area;
- (ii) increase the frequency or severity of any existing violation of any standard in any area; or
- (iii) delay timely attainment of any standard or any required interim emissions reductions or other milestones in any area.⁵⁸²

(2) A federal agency making a conformity determination must provide a thirty-day notice of the proposed and final action, and the agency's draft and final conformity determination must be sent to the appropriate EPA regional office(s), state and local air quality agencies, any affected federal land managers, the lead planning agency and the Metropolitan Planning Organization (MPO).⁵⁸³ An EPA regional office reviews the draft conformity determination and makes formal comments.⁵⁸⁴

(3) The federal agency must make its draft conformity determination available on request, as well as publicize it in the area affected by the action and provide thirty days for

578. *See id.* at §§ 51.851(b), 93.151 (establishing state conformity plan).

579. *See id.* at § 51.854 (discussing agency's responsibility).

580. *See id.* at § 51.858 (addressing requirements necessary to make conformity finding).

581. *Id.*; *see* Clean Air Act § 176(c)(1), 42 U.S.C. § 7506(c)(1) (2000) (determining whether federal agency's actions conform).

582. Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.858(b)(2) (2003); *see* Clean Air Act § 176(c)(1), 42 U.S.C. § 7506(c)(1) (2000).

583. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.855 (2003) (discussing details of making conformity determination).

584. *See id.* at § 51.858 (reviewing conformity determination).

the public to submit written comments.⁵⁸⁵ The federal agency must make available its response to all the comments received and must publish the final list of its activities regarding the determination in the Federal Register.⁵⁸⁶

(4) Emissions from a federal action must be specifically identified and accounted for in the SIP.⁵⁸⁷ The federal agency must demonstrate that the total emissions will not exceed the SIP's emissions budget.⁵⁸⁸ An action must comply or be consistent with all relevant SIP requirements and milestones.⁵⁸⁹ The control strategy implementation plan's emissions budget is the ceiling for emissions until the state submits a plan with a revised emissions budget.⁵⁹⁰

(5) All required analyses must be based on the latest planning assumptions, the latest and most accurate emission estimation techniques available and specific EPA guidance.⁵⁹¹

(6) Measures to mitigate air quality impacts must be identified, and the process for their implementation and enforcement must be described.⁵⁹² The federal agency making the conformity determination must obtain written commitments from the persons or agencies who will im-

585. *See id.* at § 51.856(a), (b) (addressing publication requirements).

586. *See id.* at § 51.856(c), (d); *see also id.* at § 51.853(h)(3), (4) (reviewing further publications requirements).

587. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.858(a)(1) (2003) (focusing on federal action emissions).

588. *See id.* at § 51.858(a)(5)(i)(B)(2). If emissions exceed SIP emissions budgets, it may be possible to use emissions trading to obtain offsets to be used to demonstrate conformity. *See id.* at § 51.858(a)(5)(iii). These must be emissions reductions that are "quantifiable, consistent with applicable SIP attainment and reasonable further progress demonstrations, surplus to reductions required by, and credited to, other applicable SIP provisions, enforceable at both the State and Federal levels, and permanent within the time frame specified by the program." *Id.* at § 51.852; *see also* INTERMODAL SURFACE, *supra* note 532, at 652 (citing Kathleen Smith, *Issues in the Development of an Emissions Trading Policy for Base Closure and Realignment*, AIR & WASTE MGMT. ASS'N (1995)) (discussing existence of emissions trading markets).

589. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.850 (2003) (addressing need to meet SIP requirements).

590. *See id.* at § 51.858(5)(i)(A) (focusing on control strategy implementation plan's emission budget).

591. *See id.* at § 51.859 (discussing analysis requirement).

592. *See id.* at § 51.860(a) (describing all mitigating impacts).

plement any mitigation measures identified as conditions of the determination.⁵⁹³ Mitigation measures may be modified if the new mitigation measures continue to support the conformity determination.⁵⁹⁴ After EPA approves this regulation, any mitigation measures are both state and federally enforceable.⁵⁹⁵

The conformity approval of a federal action automatically lapses five years from the reporting date of the final conformity determination, unless the action has been completed or a continuous program begins within a reasonable time to implement the action.⁵⁹⁶ If, after the conformity determination is made, the action is changed so that emissions increase above allowable levels, the regulations require a new conformity determination.⁵⁹⁷

The General Conformity Rule allows federal agencies to establish a rebuttable presumption that certain actions conform.⁵⁹⁸ The Rule also creates a number of exemptions from its requirements.⁵⁹⁹ A conformity determination is not required for: (1) permits under the CAA's new source review (NSR) program; (2) actions in response to emergencies or natural disasters; (3) most research and training; (4) alterations of existing structures to meet environmental requirements; and (5) emissions from remedial or removal actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).⁶⁰⁰

593. *See id.* at § 51.860(b) (requiring written commitments).

594. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.860(e) (2003) (focusing on modification of mitigation measures).

595. *See id.* at § 51.860(g) (outlining state and federal enforceability of mitigation measures).

596. *See id.* at § 51.857(a) (addressing length of presumption).

597. *See id.* at § 51.857(c) (discussing need for new conformity determination).

598. *See id.* at § 51.853(g) (focusing on rebuttable presumption that federal agencies actions conform).

599. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.853(d) (2003) (emphasizing objections to conformity requirement).

600. *See id.* at § 51.853(d)(1)-(5) (2000); *see also* CERCLA §§ 101-405, 42 U.S.C. §§ 9601-9675 (2000) (discussing circumstances where conformity is not required).

The general conformity requirements apply to releases of the six criteria pollutants or their precursors⁶⁰¹ in nonattainment⁶⁰² and maintenance areas,⁶⁰³ but not to other pollutants regulated by the CAA.⁶⁰⁴ The Rule's provisions apply only when direct and indirect emissions of a criteria pollutant in a nonattainment or maintenance area for that pollutant exceed amounts specified in 40 C.F.R. § 51.853(b).⁶⁰⁵ These *de minimis* levels are pollutant-specific and may vary according to the severity of nonattainment.⁶⁰⁶ With the exception of lead, these levels were derived from the "significance levels used in the NSR process applicable to modifications of existing major sources"⁶⁰⁷ and at 40 C.F.R. part 51.⁶⁰⁸ Notwithstanding the *de minimis* rule, if the direct and indirect emissions from a federal action represent ten percent or more of a nonattainment or maintenance area's total emissions of that pollutant, the action is regionally significant and the requirements of 40 C.F.R. §§ 51.850 and 51.855 through 51.860 apply.⁶⁰⁹ The Transportation Conformity Rule, in contrast, does not have *de minimis* exemptions.⁶¹⁰ The

601. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.852 (2003). The six criteria pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone, particulate matter (PM₁₀) and sulfur dioxide (SO₂). See *id.* For ozone nonattainment areas, photochemical oxidants such as NO_x and VOCs must be considered for both "applicability and analysis." See Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 58 Fed. Reg. 63,214, 63,240 (Nov. 30, 1993) (codified 40 CFR pts. 6, 51, 93).

602. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.853(b) (2003) (focusing on nonattainment areas).

603. See *id.* The status of all areas is found at 40 C.F.R. pt. 81 (2003). A maintenance area is a former nonattainment area that has attained the NAAQS for the relevant criteria pollutant. See Clean Air Act § 175A, 42 U.S.C. § 7505a (2000).

604. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.853(b) (2003) (containing inclusive list of pollutants regulated under General Conformity Rule).

605. See *id.* at § 51.853(c) (addressing application of rule's provisions).

606. See *id.* at § 51.853(b). For example, only ten tons of ozone per year are allowed to be admitted in "extreme" nonattainment areas, whereas fifty tons are permitted in "serious" nonattainment areas. See *id.*

607. See Clean Air Act § 173, 42 U.S.C. § 7503 (2000) (explaining derivation of *de minimis* levels).

608. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.853(a), (b) (2003) (explaining derivation of *de minimis* levels).

609. See *id.* at § 51.853(i) (addressing nonattainment standards).

610. See Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects

General Conformity Rule also contains over twenty exemptions for federal actions that would result in no emissions increase or an increase in emissions that is "clearly *de minimis*."⁶¹¹ A few of the exemptions are controversial, such as the exemption for transfers of real property between federal entities.⁶¹²

Federal actions subject to a general conformity analysis concern both direct and indirect emissions. Direct emissions occur at the same time and in the same place as the initial federal action.⁶¹³ Examples include emissions from construction and construction-related mobile sources, such as trucks or bulldozers, used at the new facilities.⁶¹⁴ Indirect emissions often involve future mobile source emissions, such as new employee vehicles, new aircraft or support equipment used in facility operations.⁶¹⁵ Indirect emissions may also involve induced growth in emissions due to third parties locating in the area of the federal improvement.⁶¹⁶ If two legal tests found in the General Conformity Rule are met, indirect emissions are added to direct emissions to determine whether total emissions exceed the *de minimis* emissions threshold.⁶¹⁷ The indirect emissions that count are those: (1) caused by the federal action, but which may occur later in time and/or may be farther removed in distance from the action itself but still are reasonably foreseeable; and (2) where the federal agency can practicably control and will

Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act, 58 Fed. Reg. 62,188, 62,190-91 (Nov. 24, 1993).

611. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.853(c)(2) (2003) (listing federal exemptions from conformity requirements).

612. See *id.*; see also Conservation Law Found., Inc. v. Dep't of the Air Force, 864 F. Supp. 265, 292 (D.N.H. 1994) (holding that Air Force violated public disclosure requirement of NEPA and must address Clean Air Act conformity before transferring land to another federal entity).

613. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.852 (2003) (providing list of terms to interpret general conformity).

614. See Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 58 Fed. Reg. 13,836, 13,842 (proposed Mar. 15, 1993) (codified at 40 C.F.R. pts 51, 93) (discussing requirements for direct emission).

615. See *id.* at 13,839 (listing federal actions affected by general conformity requirements).

616. See *id.* (discussing whether federal agencies should be concerned about indirect emissions caused by federal actions that they have no control over).

617. See Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.858(a) (2003) (addressing criteria to determine conformity of general federal actions).

maintain control over the emissions due to a continuing program responsibility of the federal agency.⁶¹⁸

Limiting the use of the indirect emissions as a trigger for general conformity may result in no general conformity review for large-scale non-federal development.⁶¹⁹ The combined effect of the general conformity *de minimis* exemptions, agency presumptions of conformity, exclusions and restrictions on the consideration of indirect emissions result in few federal actions relating to private sector projects having to meet the federal general conformity requirements.⁶²⁰ For example, construction projects by non-federal entities usually will not require general conformity compliance because the federal government will not maintain sufficient continuing control over the project to mandate consideration of the secondary environmental impacts from growth associated with a project for which federal permits, funding, or both are required.⁶²¹ Federal agencies, working to protect their interests during the general conformity regulation development process, succeeded in limiting the program's applicability at the cost of significantly reducing the program's importance.⁶²² For projects involving federal lands or facilities, however, the general conformity requirements can be a significant hurdle for federal agencies to overcome before new development can occur. The general conformity requirements also provide an additional means for state governments to control federal facilities.

§ 4(c). Transportation Conformity

The essence of the 1990 CAA Amendment's transportation conformity provision, which applies to highways and mass transit, is that transportation plans, programs and projects must contribute to

618. See *id.* at § 51.852 (defining terms used to determine general conformity).

619. See Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 58 Fed. Reg. at 13,840 (proposed March 15, 1993) (codified at 40 C.F.R. pts. 51, 93) (focusing on difficulty of calculating reasonability foreseeable effects of indirect emissions on nonfederal projects).

620. See INTERMODAL SURFACE, *supra* note 532, at 656 (citing U.S.E.P.A., Office of Air Quality Planning, U.S. ENVTL. PROTECTION AGENCY, OFFICE OF AIR QUALITY PLANNING AND STANDARDS, GENERAL CONFORMITY GUIDANCE: QUESTIONS AND ANSWERS 4-5, 11-15 (1994)) (discussing calculation of *de minimis* levels and *de minimis* determination).

621. See *id.* at 22-23 (explaining that nonfederal entity sponsored construction projects do not result in general compliance).

622. See generally James T. Lang, *The Clean Air Act Section 176 General Conformity Program*, 2 ENVTL. LAW. 353 (1996) (discussing how CAA General Conformity fails to ensure complete conformity).

air quality improvement in nonattainment areas.⁶²³ Transportation plans and projects must conform to the SIP's goal of achieving the NAAQS; transportation projects cannot result in new violations or cause a delay in timely attainment.⁶²⁴

CAA section 176(c)(2) requires emissions estimates from the transportation plan and transportation improvement programs (TIPs)⁶²⁵ to be consistent with the SIP's motor vehicle emissions budget, which is determined by evaluating emissions estimates and required emissions reductions.⁶²⁶ This requirement represents a shift from the 1977 CAA Amendment's focus on ensuring that transportation planning would not interfere with TCMs in the SIP.⁶²⁷ Section 176(c)(2) provides that an individual transportation project will conform only if it is part of a conforming plan and TIP, or if it demonstrates that projected emissions from the project, when considered with emissions projected for the conforming transportation plan and TIP, are consistent with the emissions reduction projections and schedules in the SIP.⁶²⁸ In addition, section 176(d) provides that federal agencies must give funding priority to TCMs in SIPs.⁶²⁹ Integrating transportation and air quality planning is intended to protect the SIP's integrity by ensuring emission budgets are not exceeded and additional measures are used to counterbalance emissions from new transportation actions.⁶³⁰

Congress instructed EPA to promulgate criteria and procedures for determining transportation conformity and to require each state to submit a SIP revision that includes such criteria and

623. See Clean Air Act § 176(c)(1), 42 U.S.C. § 7506(c)(1) (2000) (emphasizing importance of transportation conformity provision to air quality improvement in nonattainment areas).

624. See *id.* (requiring that transportation projects must aid NAAQS achievements)

625. See *id.* at § 7506(c)(2) (discussing regulations and requirements on transportation plans and transportation improvement programs).

626. See *id.* at § 7506(c)(2)(A) (explaining requirements for transportation plan or TIP to be found in conformity by metropolitan planning organization).

627. See Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 105, 91 Stat. 685, 689-90 (including no requirement that emissions estimates be consistent with SIP's motor vehicle emissions budget).

628. See Clean Air Act § 176(c)(2), 42 U.S.C. § 7506(c)(2) (2000) (setting out requirements for federal agency approval, funding and acceptance of transportation plan).

629. See *id.* at § 176(d) (requiring priority be given to TCMs in SIP which achieve and maintain national primary ambient air-quality standards).

630. See *id.* (granting authority to each department, agency, or instrumentality of federal government involved in air quality control).

procedures.⁶³¹ The final Transportation Conformity Rule,⁶³² which EPA promulgated on November 24, 1993, achieved this purpose. The criteria and procedures apply as federal law to both federal and local conformity determinations.⁶³³ After the required SIP revisions were made, transportation conformity criteria and procedures also become state law.⁶³⁴ A state may incorporate more stringent conformity criteria and procedures in its SIP than those in the federal rule if the requirements apply both to federal and non-federal entities.⁶³⁵

§ 4(d). Overview Of The Transportation Planning Process

The conformity requirements of CAA section 176 and the implementing regulations require transportation planning to conform to the CAA requirements.⁶³⁶ The combined mandates of both air pollution law and transportation law shape conformity planning. Transportation plans, programs and projects funded under Title 23 or under the Federal Transit Act must conform before the metropolitan planning organization (MPO) can approve them and before DOT can approve, accept or fund them. A federally-funded project has to come “from a conforming plan and program, and the design concept and scope” of the project has to be adequate to determine emissions at the time of the conformity determination. A project not derived from a conforming plan or program must be analyzed in the aggregate with other projects in the conforming plan and program to ensure that the project would not cause the transportation plan and program to exceed the emission reduction

631. *See id.* at § 176(c)(4) (setting November 15, 1991 as date by which Administrator shall promulgate criteria and procedures for demonstrating and assuring conformity in transportation plans, programs, and projects).

632. *See* Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act, 58 Fed. Reg. 62,188 (Nov. 24, 1993) (codified at 40 C.F.R. pts. 51, 93) (summarizing final rule).

633. *See id.* at 62,189 (explaining that in addition to being federal law, states must submit to EPA revisions to SIPs establishing conformity criteria and procedures consistent with this law).

634. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans: Determining Conformity of General Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 51.390(b) (2003) (noting that following EPA approval of required conformity implementation plan, conformity determinations would be governed by approved state criteria and procedure).

635. *See id.* at § 51.390(a) (stating that more stringent state conformity procedures than those in federal rule must apply equally to federal and non-federal entities).

636. *See* 42 U.S.C. § 7506 (2000) (discussing air pollution prevention and control).

projections and schedules assigned to the plan and program in the applicable SIP.

CAA section 174 provides for review and update, if necessary, of air quality planning procedures.⁶³⁷ It also provides for the assignment of responsibilities for plan development and implementation. CAA section 174(a) requires the state-certified organization preparing the SIP to include local elected officials and representatives of the state air quality planning agency, the state transportation planning agency, the MPOs, the organization responsible for the air quality maintenance planning process and any other organization responsible for developing, submitting or implementing the SIP. The MPOs, however, continue to be the primary entities responsible for conformity compliance. CAA section 174(b) requires SIP development to be coordinated with the 3C transportation planning process required under section 134 of Title 23.

Local and state governments use the 3C planning process to qualify for federal highway and transit assistance. In addition, the transportation laws require that the Secretary of Transportation, after consultation with EPA Administrator, "develop and promulgate guidelines to assure that highways constructed pursuant to this title are consistent with any applicable SIP."⁶³⁸ Thus, mobile source emissions must not exceed the budget established in the SIP. To be eligible for federal funds, each urbanized area must develop a transportation plan and a TIP.

A transportation plan generally is a twenty-year or longer plan that describes policies, strategies and facilities to accommodate current and projected travel demands and to make efficient use of the existing transportation system.⁶³⁹ It must include the sixteen factors that 23 U.S.C. § 134(f) and section 8(f) of the Federal Transit Act (FTA) require state and local governments to consider as part of the 3C planning process.⁶⁴⁰ A plan must be revised and updated at least once every three years in air pollution nonattainment areas

637. See *id.* at § 7504(a) (requiring state and local elected officials to jointly review and update planning procedures).

638. See 23 U.S.C. § 7504(a) (2000) (discussing plan implemented for air quality maintenance).

639. See Metropolitan Transportation Planning Process, 23 C.F.R. § 450.322(a) (2002) (noting twenty year period does not preclude planning agency from doing more). The Metropolitan Washington, D.C. in 2003 used a planning horizon of twenty seven years for its Financially Constrained Long Range Transportation Plan. See *Federal Funding Tied to CLRP*, XI TPB News (National Capital Region Transportation Planning Board) June 2003 at 17:3.

640. See Metropolitan Transportation Planning Process 23 C.F.R. § 450.316(a) (2002) (setting ten factors to be explicitly considered, analyzed and reflected).

and at least once every five years in other areas.⁶⁴¹ An acceptable plan must describe how the transportation system will serve the metropolitan planning area's development objectives and address congestion and air quality concerns.⁶⁴²

A TIP is a program of transportation projects, consistent with the transportation plan, which includes a priority list of projects to be carried out within each three-year period after the initial adoption of the TIP.⁶⁴³ The TIP may be based on a longer planning horizon; in Washington, D.C., for example, a six year TIP is used.⁶⁴⁴ The MPO develops the TIP and updates it at least every two years. The governor must then approve the TIP. Upon approval, it is included in the state TIP and is subject to review and approval by FHWA and FTA.⁶⁴⁵ In nonattainment areas, the TIP must conform to the SIP and give priority to TCMs in the SIP. Every year, each state must prepare and submit to DOT a statewide program of projects for which the state seeks federal assistance. Projects are expected to be consistent with the state's transportation plan and the applicable TIP.⁶⁴⁶ Each time an MPO updates or amends either the transportation plan or the TIP, it must make a conformity determination that emissions will not exceed the emissions budget.⁶⁴⁷

The most obvious overlaps between air pollution and transportation planning are the TCMs in the SIPs. TCMs are commonly, but not exclusively, the sixteen measures set forth in CAA section 108(f)(1)(A).⁶⁴⁸ The list includes public transit and exclusive bus and high occupancy vehicle (HOV) lanes or roads. Although available data fail to demonstrate that TCMs will contribute significantly to air quality improvement, they still must be part of transportation plans and TIPs because all transportation measures must conform

641. *See id.* at § 450.322(a) (noting requirements for revisions of plan).

642. *See id.* at § 450.316(a) (noting requirements of acceptable TIP).

643. *See id.* at § 450.324(d) (defining TIP).

644. *See* Air Quality Numbers On the Table, XI TPB News (National Capital Region Transportation Planning Board), Apr. 2003, at 9:1, 3 (discussing inconsistencies in air quality challenges).

645. *See* Metropolitan Transportation Planning Process, 23 C.F.R. § 450.324 (b) (2002) (explaining that FHWA and FTA must make conformity determination on any new or amended TIPs).

646. *See id.* at § 450.324(f) (discussing what should be included in TIP).

647. *See* TPB Endorses Projects for Funding in Federal Reauthorization, XI TPB News (National Capital Region Transportation Planning Board), Apr. 2003, at 9:1, 3 (discussing computer models that predict emissions).

648. *See* 42 U.S.C. § 7408(f)(1)(A) (2000) (setting out sixteen measures regarding formulation and emission reduction potential of TCMs).

to SIP emissions budgets.⁶⁴⁹ The conformity approach is important because transportation projects, which had escaped CAA scrutiny because they were not TCMs, are included in conformity planning.

The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), the major transportation planning statute, expired on September 30, 1997. The Transportation Equity Act For The 21st Century that reauthorized ISTEA was passed by Congress on May 22, 1998 and was signed by President Clinton on June 9, 1998.⁶⁵⁰ While this law did not change the conformity requirements, it modified the transportation planning requirements that must conform to the CAA.⁶⁵¹

§ 4(e). Conformity Regulations

EPA promulgated the final transportation conformity rule on November 24, 1993.⁶⁵² The rule was challenged by numerous par-

649. See James Kennedy, *ISTEA: CMAQ Will Cut Emissions By 1999, But Estimates Are Rough*, EPA Official Says, Daily Env't Rep. (BNA), June 19, 1997, at A-13 (explaining that Congestion Mitigation and Air Quality Improvement Program (CMAQ), which was created by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, provides money for transportation projects that are claimed to produce substantial air pollution benefits; however, EPA generally will not give SIP credits to states because it claims project benefits cannot be accurately quantified).

The CMAQ program is explained in policy guidance issued at The Congestion Mitigation and Air Quality Improvement (CMAQ) Program of the Intermodal Surface Transportation Efficiency Act-Guidance Update, March 7, 1996, 61 Fed. Reg. 50,890-02 (Sept. 27, 1996). On April 7, 1999, program guidance was posted on the Federal Transit Administration's World Wide Web site. See *The Congestion Mitigation and Air Quality Improvement (CMAQ) Program Under the Transportation Equity Act for the 21st Century (TEA-21)*, Program Guidance, <http://www.fta.dot.gov/fta/library/planning/enviro/cmaq.htm> (last visited Aug. 24, 2003).

650. See Transportation Equity Act for the 21st Century, Pub. L. No. 105-178, 112 Stat. 107 (authorizing funds for federal-aid highways, highway safety programs, transit programs and other purposes).

651. See Transportation Equity Act For The 21st Century, Conference Report H.R. 2400, H.R. Rep. No. 105-550 (1998) (explaining that TEA-21 includes seven factors that replace 16 metropolitan and 23 statewide planning factors to be considered in metropolitan and statewide planning processes). TEA-21 requires the planning process to consider strategies that will: (a) support the economic vitality of the area; (b) increase the safety of the transportation system; (c) increase the accessibility of transportation; (d) protect and enhance the environment, promote energy conservation, and improve the quality of life; (e) enhance the integration and connectivity of the transportation system; (f) promote efficient transportation operation; and (g) emphasize the preservation of the existing transportation system. See *Federal Highway Administration and Federal Transit Administration TEA-21 Planning and Environmental Provisions: Options for Discussions*, U.S. Dept. of Transportation, <http://www.fhwa.dot.gov/environment/tea21opt.htm> (last visited Aug. 24, 2003).

652. See Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act, 58 Fed.

ties and upheld by the United States Court of Appeals for the D.C. Circuit in *Environmental Defense Fund, Inc. v. EPA*.⁶⁵³ In a subsequent case, *Sierra Club v. EPA*, the D.C. Circuit held that EPA's grant of a grace period for complying with the conformity regulations contravened the plain meaning of the CAA.⁶⁵⁴ Significant amendments to the conformity rule were made on August 15, 1997.⁶⁵⁵

On March 2, 1999, the D.C. Circuit once again ruled on the conformity regulations in *Environmental Defense Fund v. EPA*.⁶⁵⁶ The lawsuit challenged three EPA regulations that allowed transportation projects to move forward despite violations of conformity requirements. The court held that transportation plans must demonstrate conformity to current air quality standards.⁶⁵⁷ The court also invalidated the grandfather regulation as it applied to federally funded projects; however, non-federally funded projects that receive approval before conformity lapses may be "grandfathered."⁶⁵⁸ The court also denied EPA the right to approve a project based on a submitted, but disapproved or not yet approved emissions budget.⁶⁵⁹ This decision was expected to halt highway projects in about ten areas in the country.⁶⁶⁰ Republican members of Congress⁶⁶¹ reacted, and in October 2000, Congress amended

Reg. 62,188 (Nov. 24, 1993) (codified at 40 C.F.R. pts. 51, 93) (establishing final criteria and procedures for determining that transportation plans, programs and projects conform to state and federal air quality implementation plans).

653. See 82 F.3d 451 (D.C. Cir. 1996), *amended by* 92 F.3d 1209 (D.C. Cir. 1996).

654. See 129 F.3d 137 (D.C. Cir. 1997) (holding that EPA's grace period exempting designated nonattainment areas from CHAs transportation conformity requirements violated plain terms of Act and was, therefore, unlawful).

655. See Transportation Conformity Rule Amendments: Flexibility and Streamlining, 62 Fed. Reg. 43,780 (Aug. 15, 1997) (codified at 40 C.F.R. pt. 93) (amending transportation conformity rule to make it more flexible, giving state and local governments more authority in selecting performance measures used as tests for conformity and more discretion when transportation plan does not conform to SIP).

656. See 167 F.3d 641 (D.C. Cir. 1999); *see also* Michael R. Yarne, *Conformity as Catalyst: Environmental Defense Fund v. Environmental Protection Agency*, 27 *ECOLOGY L.Q.* 641 (2000).

657. See *Env'tl. Def. Fund*, 167 F.3d at 646 (interpreting statutory language "comes from a conforming plan or program," which is entirely in present tense to refer to projects coming from currently conforming plan or program).

658. See *id.* at 649 (distinguishing between federally funded and non-federally funded projects).

659. See *id.* at 650-51 (describing EPA's lack of authority to approve project based solely on submission).

660. See *Air Pollution: Federal Funds for Ongoing Road Projects Should Halt If Conformity Lapses, DOT Says*, *Daily Env't Rep. (BNA)*, Apr. 12, 1999, at A-8.

661. See James Kennedy, *Air Pollution: Sen. Bond to Expand Legislative Fight Against 'Legal Assaults' on Roadbuilding*, *Daily Env't Rep. (BNA)*, Apr. 23, 1999, at A-4; *see also* Nancy Ognanovich, *Air Pollution: Senators Raise Concerns Over Impact of*

the CAA to nullify the 1997 *Sierra Club v. EPA* decision and reinstate the grace period.⁶⁶² On August 6, 2002, EPA amended its conformity rule to comply with the D.C. Circuit's opinions and the statutory change.⁶⁶³

The rule requires each state to revise its SIP according to the requirements of 40 C.F.R. § 51.390 and part 93, subpart A, after consultation as specified in 40 C.F.R. § 93.105. After EPA approves the SIP revision, federal agencies are subject to its requirements. Until a SIP revision is approved, the conformity provisions of 40 C.F.R. part 93 apply to federal agencies. Most states have had their general conformity SIP revisions approved, but states that do not have an approved transportation conformity SIP have conformity determined as provided in 40 C.F.R. part 93. On June 30, 2003, EPA proposed to amend the transportation conformity rule to make the federal approval process more flexible with respect to determinations made by states concerning impacts on air quality.⁶⁶⁴ The Transportation Conformity Rule is complex, and space restraints limit the discussion of this Rule.⁶⁶⁵

§ 4(e)(1). *Who Is Subject To Conformity Requirements?*

MPOs and the DOT must make conformity determinations on transportation plans and TIPs before they are adopted, accepted or approved.⁶⁶⁶ The FHWA and the FTA must make conformity find-

Decision on TEA-21 Highway Projects, Daily Env't Rep. (BNA), Apr. 15, 1999, at A-6; Nancy Ognanovich, *Transportation: Senators Weigh Various Plans to Address Ruling on 'Grandfathered' Road Projects*, 30 Env't Rep. (BNA) 13 (May 7, 1999).

662. See 129 F.3d 137 (D.C. Cir. 1997).

663. See Revised Guidance for Implementing the March 1999 Circuit Court Decision Affecting Transportation Conformity, 67 Fed. Reg. 5882 (Feb. 7, 2002); see also Transportation Conformity Rule Amendments: Minor Revision of 18-month Requirement for Initial SIP Submissions and Addition of Grace Period for Newly Designated Nonattainment Areas, 67 Fed. Reg. 50,808 (Aug. 6, 2002) (codified at 40 C.F.R. pt. 93). See Transportation Conformity Rule Amendment: Response to Court Decision and Additional Rule Changes, 68 Fed. Reg. 38,974 (proposed June 30, 2003) (codified at 40 C.F.R. pt. 93) (stating that EPA subsequently proposed changes in conformity rule to be consistent with *Env'tl. Def. Fund v. EPA* decision).

664. See Transportation Conformity Rule Amendments: Response to Court Decision and Additional Rule Changes, 68 Fed. Reg. 38,974 (proposed June 30, 2003) (codified at 40 C.F.R. pt. 93) (proposing to amend transportation conformity rule to address United States Court of Appeals for D.C. Circuit ruling in *Env'tl. Def. Fund v. EPA*).

665. For more detailed coverage, see generally, INTERMODAL SURFACE, *supra* note 532; see also F. James Cumberland, Jr., *EPA's August 1997 Final Rule Regarding Transportation Conformity*, 4 ENVTL. LAW. 510 (1998) (discussing 1997 amendments to rule).

666. See Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.102(a) (2003) (determining when MPO or DOT must make conformity decisions).

ings before their projects are adopted, accepted, approved or funded.⁶⁶⁷ A state agency may have an independent duty to assess a project's conformity based on its SIP.⁶⁶⁸ Other federal agencies are responsible for meeting federal conformity requirements for actions in their areas of responsibility under the general conformity regulations. EPA and DOT created a memorandum of understanding in April 2000 to assist them in coordinating the planning in metropolitan areas with poor air quality.⁶⁶⁹

§ 4(e)(2). *What Transportation Activities Require A Conformity Determination?*

Conformity determinations are required for transportation plans and TIPs. They are required before approving, funding, or implementing FHWA/FTA projects unless they are exempted.⁶⁷⁰ EPA provides a list of exempt projects at 40 C.F.R. § 93.106. A project whose design concept and scope changes significantly must obtain a new conformity determination.⁶⁷¹ For projects that are not FHWA/FTA projects, conformity determinations are required for regionally significant highway or transit projects.⁶⁷² A new conformity determination for transportation plans and TIPs is required after three years.⁶⁷³ If a project delay occurs, conformity "must be redetermined for any FHWA/FTA project if three years have elapsed since the most recent major step to advance the project (NEPA process completion; start of final design; acquisition of a

667. See *id.* (noting that for all FHWA/FTA projects falling within scope of § 93.102, FHWA/FTA must approve proposals).

668. See *Citizens For a Better Env't v. Deukmejian*, 1990 WL 371772 (N.D. Cal. Dec. 21, 1990) *modified on reh'g*, 1991 WL 424981 (N.D. Cal. Mar. 11, 1991) (holding that MTC's proposed conformity assessment procedures are subject to conformity obligations under 1982 Bay Area Air Quality Plan).

669. See National Memorandum of Understanding Between the U.S. Department of Transportation and the U.S. Environmental Protection Agency, Daily Env't Rep. (BNA), April 27, 2000, at E-1 (focusing on transportation planning conformity issues).

670. See Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.102(a)(2) (2003) (setting out criteria used to determine when project is and is not exempted from conformity determinations).

671. See *id.* at § 93.115(b)(1) (noting that project is considered to be from conforming transportation plan if specifically included in conforming transportation plan and design and scope of project have not changed significantly).

672. See *id.* at § 93.121 (setting out requirements for recipients of federal funding before approval of regionally significant highway or transit project).

673. See *id.* at § 93.104(b)(3), (c)(3) (explaining frequency of conformity determinations for transportation plans).

significant portion of the right-of-way; or approval of the plans, specifications and estimates) occurred.”⁶⁷⁴

§ 4(e)(3). When And Where Does Transportation Conformity Apply?

The Transportation Conformity Rule applies “in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan.”⁶⁷⁵ The rule applies to emissions of ozone, CO, NO₂ and PM₁₀.⁶⁷⁶ It also applies to the ozone precursor pollutants — VOCs and NO_x — in ozone nonattainment and maintenance areas; to VOCs, NO_x and PM₁₀ in PM₁₀ areas for which transportation-related precursor emissions are a significant contributor to nonattainment; and to NO_x in NO₂ nonattainment and maintenance areas.⁶⁷⁷ The National Highway System Designation Act of 1995 amended CAA section 176(c) to clarify that conformity requirements only apply to nonattainment and maintenance areas.⁶⁷⁸

Transportation plans adopted after January 1, 1997 must meet conformity requirements.⁶⁷⁹ Because all transportation plans and TIPs must have conformity redetermined at least every three years, the rule applies to all plans and TIPs.⁶⁸⁰ Projects that are adopted, accepted, approved or funded after August 15, 1997 are subject to the rule. A maintenance period begins when EPA approves a state request to have an area redesignated as an attainment area and

674. *See id.* at § 93.104(d) (discussing FITWA/FTA projects).

675. *See* Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.102(b) (2003) (describing where Transportation Conformity Rule applies).

676. *See id.* at § 93.102(b)(1) (listing pollutants relevant to provision).

677. *See id.* at § 93.102(b)(2); *see also* Transportation Conformity Rule Amendments for the New 8-Hour Ozone and PM_{2.5} National Ambient Air Quality Standards and Miscellaneous Revisions of Existing Areas, 68 Fed. Reg. 62,690 (proposed Nov. 5, 2003) (codified at 40 C.F.R. pt. 93) (proposing amendment of transportation conformity rule to include criteria and procedures for new eight hour ozone and fine particulate matter national ambient air quality standards).

678. *See* National Highway System Designation Act of 1995, Pub. L. No. 104-59, 109 Stat. 568 (amending previous rule, which required plan for implementation of any ambient air quality standard for any air quality control region designed pursuant to CAA).

679. *See* Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.106(a) (2003) (setting out conformity requirements for post January 1, 1997 transportation plans).

680. *See id.* at § 93.104(c) (noting that MPO and DOT determine conformity at least every three years).

ends twenty years later unless the applicable SIP specifies a longer time period.⁶⁸¹

§ 4(e)(4). *How Is The Transportation Conformity Rule To Be Applied?*

The principal goal of the Transportation Conformity Rule is to assure transportation plans, TIPs and projects stay within the motor vehicle emission budget as defined at 40 C.F.R. § 93.118. "The criteria for making conformity determinations differ based on the action under review (transportation plans, TIPs, and FHWA/FTA projects), the relevant pollutant(s) and the status of the implementation plan."⁶⁸² Transportation plans adopted after January 1, 1997 in serious, severe or extreme ozone nonattainment areas and in serious carbon monoxide nonattainment areas are subject to more specific requirements.⁶⁸³

CAA section 176(c)(2)(B) requires "timely implementation of TCMs."⁶⁸⁴ If TCMs are delayed, conformity may be demonstrated if all obstacles to implementation have been identified and are being overcome and if funding of TCMs is being given maximum priority.⁶⁸⁵ Nothing in the TIP may interfere with implementing a TCM in a SIP.⁶⁸⁶ To demonstrate conformity, project-level mitigation measures may be necessary. Such measures must be in writing prior to a conformity determination, and project sponsors must comply with such commitments.⁶⁸⁷

The transportation conformity process is to review and control transportation projects that receive federal funds or approval. Federal and non-federal projects, however, share the SIP's motor vehicle emissions budget. Thus, some control over non-federal projects is necessary to prevent those projects from shifting air pollution control efforts disproportionately to federal projects. The CAA requires that a transportation project must come either from a con-

681. *See id.* at § 93.102(b)(3) (describing length of maintenance period).

682. *Id.* at § 93.109(a). *See also id.* at § 93.109(b) (tbl. 1) (outlining applicable regulatory requirements for transportation plans, TIPs and projects).

683. *See* Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.106 (2003) (explaining increased requirements for content of transportation plans adopted after January 1, 1997).

684. *See id.* at § 93.113(a) (requiring timely implementation of TCM's from implementation plans which is not from conforming plan and TIP).

685. *See id.* at § 93.113(c)(1) (setting forth conditions for TIPs, which if met, satisfy criterion for timely implementation of TCMs).

686. *See id.* at § 93.113(c)(3) (stating that TIP may not interfere with implementation of any TCM).

687. *See id.* at § 93.125(c) (discussing per-conformity determination).

forming transportation plan and TIP, or from a regional emissions analysis that demonstrates the plan and TIP would still conform if the project was included. EPA's definition of "transportation project" is not limited to federally funded or approved projects, but includes "nonfederal regionally significant projects."⁶⁸⁸ On January 18, 2001, EPA and DOT jointly issued a guidance document for use in the conformity process titled, "Use of Planning Assumptions in Conformity Determinations."

On September 11, 2001, the U.S. Court of Appeals for the Fourth Circuit decided *1000 Friends of Maryland v. EPA*.⁶⁸⁹ In this case, EPA determined that a revised motor vehicle emissions budget (MVEB) was adequate for conformity purposes. The plaintiffs contended that EPA violated the CAA by finding the revised MVEB adequate without requiring additional photochemical grid modeling.

States with serious, severe or extreme nonattainment areas are required to submit SIP revisions that include attainment demonstrations that show how each nonattainment area will achieve the ozone NAAQS by the appropriate date.⁶⁹⁰ Attainment demonstrations must be based on photochemical grid modeling or any other equally effective analytical method approved by the Administrator.⁶⁹¹ This modeling of emissions after control measures are imposed, which includes adjustments for population growth, economic growth and increases in vehicle miles traveled (VMTs), must show that by a certain date emissions will lead to attainment of the NAAQS. SIP revisions also are required to show reasonable further progress and must demonstrate a fifteen percent reduction in volatile organic compounds (VOCs) from a 1990 baseline by 1996 and an additional reduction of three percent each year until the NAAQS is attained.⁶⁹² The projected level of emissions after control strategies are implemented is called the emissions budget. The emissions budget must include a quantitative motor vehicle emissions budget (MVEB) that establishes the portion of the emissions

688. See Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.121(a) (2003) (noting that requirement is consistent with requirements of various other sections for projects from conforming transportation plan and TIP).

689. 265 F.3d 216 (4th Cir. 2001).

690. See Clean Air Act § 182(c)(2)(A), (d), 42 U.S.C. § 7511a(c)(2)(A), (d) (2000) (outlining date of compliance to submission of revision to applicable implementation plan).

691. See *id.* at § 182(c)(2)(A) (discussing attainment demonstration).

692. See *id.* at § 182(c)(2)(B) (defining motor vehicle emissions budget).

budget allocated to highway and mass transit emissions.⁶⁹³ The transportation conformity provision in CAA section 176(c)(2)⁶⁹⁴ conditions federal approval and funding of transportation activities on demonstrated compliance with the MVEB contained in a control strategy and reasonable further progress SIPs.⁶⁹⁵

The primary issue in *1000 Friends of Maryland v. EPA* was whether additional photochemical grid modeling was required for a revised MVEB. CAA section 182(c)(2)(A) requires states with non-attainment areas to submit attainment demonstrations based on modeling.⁶⁹⁶ CAA section 110(a)(2)(I) incorporates these requirements into the SIP and SIP revision requirements.⁶⁹⁷ The court held that section 182(c)(2)(A) does not prevent the use of previously performed modeling to show attainment.⁶⁹⁸

Plaintiffs also contended that the conformity determinations must be based on an approved SIP. Because the MVEB was submitted to EPA, but not yet approved, the plaintiffs claimed it could not be used as the basis for a conformity decision. The court disagreed.⁶⁹⁹ Not all SIPs contain MVEBs; generally, only control strategy SIPs, attainment demonstration SIPs and reasonable further progress SIPs have MVEBs.⁷⁰⁰ Moreover, because of delays in EPA's approval, some nonattainment areas subject to conformity requirements may not have an approved SIP containing a MVEB.

693. See Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.101 (2003) (defining motor vehicle emissions budget).

694. See 42 U.S.C. § 7506(c)(2) (2000) (outlining transportation conformity provision).

695. See Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.118(e)(4) (2003) (setting out minimum criteria required for EPA to find motor vehicle emissions budget adequate for transportation conformity purposes); see also *Sierra Club v. EPA*, 129 F.3d 137, 138 (D.C. Cir. 1997) (noting Congress' decision to withhold federal funding unless transportation activities conform to requirements which Congress determines).

696. See 42 U.S.C. § 7511a(c)(2)(A) (2000) (describing attainment demonstration).

697. See *id.* at § 7410(a)(2)(I) (extending requirement for states with nonattainment areas to SIP and SIP revisions).

698. See *1000 Friends of Maryland v. Browner*, 265 F.3d 216, 230 (holding that nothing in 182(c)(2)(A) prohibits use of previously performed modeling if modeling can show plan as revised will allow area to reach attainment). The court also said EPA has the same discretion to determine the modeling requirements for SIP calls. See *id.* (citing *Clean Air Implementation Project v. EPA*, 150 F.3d 1200, 1207 (D.C. Cir. 1998)).

699. See *id.* at 231 (noting that CAA does not address how conformity decisions should be made in absence of approved SIP with adequate MVEB).

700. See Determining Conformity of Federal Actions to State or Federal Implementation Plans, 40 C.F.R. § 93.101 (2003) (defining types of SIPs and MVEBs).

The CAA does not address how conformity decisions are to be made in the absence of an approved SIP with an adequate MVEB.⁷⁰¹ Therefore, the court held that EPA's reliance on a submitted, but not yet approved MVEB is inconsistent with the requirements of section 176(c).⁷⁰²

The court concluded that new photochemical grid modeling is not required when a MVEB in a submitted SIP is revised, or before a revised MVEB is found adequate for conformity purposes.⁷⁰³ The court found the modeling in this case sufficiently demonstrated attainment when those revisions were considered, and EPA rationally concluded that new modeling was not necessary.⁷⁰⁴

The plaintiffs claimed that without new modeling EPA's determination was inadequate for conformity purposes. The court disagreed, finding EPA had met the adequacy criteria contained in 40 C.F.R. § 93.118(e)(4)(i)-(vi). Even though the revised MVEB was higher than the one found to be inadequate, the EPA determined that the revised budget, when considered with the emissions reduction programs in place and when considered with Maryland's enforceable commitment to implement all other control measures necessary to reach attainment, was consistent with attainment.⁷⁰⁵ Once a state establishes a MVEB in an approved Attainment SIP, actual emissions must be measured and, if they exceed the MVEB, section 182(c)(5)(A) requires adopting transportation control measures.⁷⁰⁶

The *1000 Friends of Maryland* is one of the few conformity cases to result in a substantial opinion. Many cases, however, have been filed, with most of them settled or decided by trial courts without an opinion.⁷⁰⁷

701. See *1000 Friends of Maryland*, 265 F.3d at 232 (citing *Env'tl. Def. Fund v. EPA*, 167 F.3d 641, 650 (D.C. Cir. 1999)) (noting that Act does not explain how conformity should be determined if no approved SIP exists or approved SIP contains inadequate MVEB).

702. See *id.* (noting holding of court).

703. See *id.* at 233 (refusing to find EPA's action "not in accordance with law" under APA requirements).

704. See *id.* at 235 (discussing EPA's failure to use photochemical grid modeling when revising MVEB in submitted SIP).

705. See *id.* at 236 (noting plaintiff argued that without new modeling EPA determination was purely speculative and not grounded on reliable information).

706. See *1000 Friends of Maryland*, 265 F.3d at 237 (explaining if actual emissions exceed budgeted emissions state must compensate with reductions from transportation sector).

707. See Gus Bauman and David M. Williamson, *Transportation Planning And Air Pollution: The Search For Common Ground*, The Metropolitan Corporate Counsel, April, 2001.

§ 4(f). Conformity Implementation

The 1990 CAA Amendments and transportation planning laws provide the means to protect areas with serious air pollution problems caused by motor vehicle emissions. They provide a mechanism for legal attacks on many large-scale projects with a transportation component or that result in increased traffic. Conformity may be an even more effective litigation tool than the National Environmental Policy Act (NEPA) because conformity imposes substantive requirements on federal agencies; whereas, NEPA only sets forth procedural requirements that agencies must follow. Under the CAA, a party meeting standing requirements may challenge a conformity decision under the arbitrary and capricious standard set forth in the Administrative Procedure Act.⁷⁰⁸

The conformity process initially appears to be a top-down program mandated by the federal government. The CAA requires conformity findings as part of transportation planning. Detailed and complex regulations explain the requirements. The states must respond to the regulations by submitting SIP revisions and obtain EPA's approval. Alternatively, they must comply with the federal program in 40 C.F.R. pt. 93, subpt. A. This process would seem to be a highly centralized operation; however, it is not. At their national headquarters, neither EPA nor the FHWA appear to pay much attention to the conformity requirements. The responsibility for conformity compliance is delegated to EPA, the DOT regional offices and the states. For outsiders attempting to exercise an oversight function, determining the status of compliance is not easy. A careful search for all SIP revisions, including evaluations of partial approvals and subsequent changes or withdrawal of rules for each state, must be performed.

Even when information on state compliance is obtained, such information is of limited value because MPOs perform much of the important work concerning conformity. The MPO's conformity analysis is designed to ensure that the long-range transportation plan and TIP meet the specific requirements imposed by the transportation conformity regulations. For individual projects, the pro-

708. See *Public Citizen et al. v. Dep't of Transp.*, 316 F.3d 1002 (9th Cir. 2003) (using both NEPA and conformity to challenge Department of Transportation regulations where court found DOT's failure to prepare EIS prior to promulgating regulations increasing operations of Mexico-domiciled motor carriers in United States not arbitrary or capricious under APA); see also *Olmsted Falls v. Fed. Aviation Admin.*, 292 F.3d 261, 263 (D.C. Cir. 2002) (finding FAA's approval of Record of Decision for runway improvement project at international airport not arbitrary or capricious).

jected emissions must be consistent with the applicable emissions budget included in the SIP. If the conformity evaluation finds all regulatory requirements were met or were inapplicable, then the CAA requirements are met. After the MPO approves the long-range plan, the TIP, or both, they are reviewed by the FHWA's and the FTA's regional offices. EPA's regional office also reviews the documents and submits comments to the FHWA. The FHWA and the FTA also make project conformity determinations.

Transportation conformity compliance depends on computer models to determine conformity. To make transportation plan and TIP conformity determinations, a large number of projects that have not been constructed must be evaluated for their future effects on air quality; thus, the assumptions used in the computer model assumptions control the result. Such assumptions are buried deeply in the evaluation process and are understood by few people. Based on these computer analyses, the transportation agencies responsible for the conformity document usually conclude that the aggregate effect of many unbuilt projects will result in lower air pollution emissions in the future. For project conformity decisions, similar computer-based evaluations must be made. Unless this system is simplified (which may not be possible) the public will continue to depend almost entirely on the good faith of the government agencies charged with developing transportation infrastructure for the efficacy of the conformity program.

§ 5. LONG DISTANCE TRANSPORT OF AIR POLLUTANTS

The SIP program has for more than thirty years attempted to improve air quality in the AQCRs that are the subject of the SIP provisions. A few provisions in the CAA deal with the long distance transport of pollutants, but the overall effectiveness of the provisions and their implementation has been minimal. In the mid-1990s, many states tried to revise their SIPs and implement programs to comply with the 1990 CAA Amendments and realized that despite their best efforts, sufficient pollutants were being transported from upwind states to make it difficult or impossible to meet the NAAQS. This led to new programs to control interstate air pollutant transport.

§ 5(a). Tall Smokestacks

Under the CAA of 1970, EPA permitted states to allow the use of tall stacks and other dispersion techniques in lieu of emission

limitations.⁷⁰⁹ This policy encouraged the construction of stacks that caused long distance transport of acid-producing chemicals emitted from stationary sources. In 1974, in *Natural Resources Defense Council, Inc. v. EPA*,⁷¹⁰ the U.S. Court of Appeals for the Fifth Circuit held that Georgia's SIP, which allowed dischargers to avoid stringent emission limits by constructing high smokestacks to disperse pollutants, was inconsistent with CAA section 110(a)(2)(B).⁷¹¹ In one of the first air pollution cases to reach the United States Supreme Court, the Court allowed each state to select whatever mix of controls it desired and held that a state has considerable freedom to design a SIP as long as it provides for attaining the NAAQS.⁷¹² The Court, however, was ambiguous on the use of dispersion techniques, such as tall smoke stacks, and subsequently several federal appellate courts indicated a belief that CAA section 110(a)(2)(B) requires maximum reliance on emission controls before either dispersion techniques (e.g. tall stacks) or intermittent controls may be used.⁷¹³

On January 6, 1976, EPA promulgated guidelines on the role of tall smokestacks, allowing their use where best available control technology (BACT) was used or where not using tall smokestacks would be economically unreasonable or technologically unsound.⁷¹⁴ Industry had already opted to construct tall smokestacks to avoid the need to install more effective, but more expensive, air pollution controls. In 1970, there were only two smokestacks in the United States higher than 500 feet. By 1985, there were more than 180, with twenty-three over 1000 feet in height. Moreover, industry adopted the practice of venting more than one combustion unit to a smokestack, which increased the exhaust gas temperature and,

709. See Approval and Promulgation of Implementation Plans, 37 Fed. Reg. 10842 (May 30, 1972) (codified at 40 C.F.R. pt. 52).

710. 489 F.2d 390 (5th Cir. 1974) (finding Georgia's SIP inconsistent with CAA). The court held that by withholding certain information intended to be public, providing for its own variance procedures, failing to rely on limitation of pollutant emissions and failing to consider public health over economics or technical feasibility violated Clean Air Act provisions. *Id.*

711. See 42 U.S.C. § 7410(a)(2)(B) (2000) (discussing state implementation plans for national primary and secondary ambient air quality standards).

712. See *Train v. NRDC*, 421 U.S. 60, 98 (1975).

713. See *Big Rivers Elec. Corp. v. EPA*, 523 F.2d 16, 21 (6th Cir. 1975) (noting other measures may not be substituted for emission limitations); see also *Kennecott Copper Corp. v. Train*, 526 F.2d 1149, 1153 (9th Cir. 1975), *cert. denied*, 425 U.S. 935 (1976) (explaining measures other than emission limitation permissible only if economically feasible emission limitation technology is unavailable); *Mission Indus., Inc. v. EPA*, 547 F.2d 123, 129 (1st Cir. 1976) (finding limitations of sulfur content in fuel consistent with requirement of "emission limitations").

714. See Stack Height Increase Guidelines, 41 Fed. Reg. 7450 (Feb. 11, 1976).

consequently, the height of the stack plume.⁷¹⁵ Thus, EPA's policies concerning smokestack parameters served to encourage the long-distance transport of acid-producing chemicals emitted from stationary sources.

In 1977, Congress expressed antipathy to the use of intermittent control systems⁷¹⁶ or high smokestacks. For purposes of projecting emissions and their impacts when developing a state implementation plan (SIP), a new CAA section 123 limited the height of a smokestack used in such calculations to a height consistent with good engineering practice (GEP) and prohibited crediting SIPs with benefits derived from dispersion techniques.⁷¹⁷ The effect is to adjust SIPs mathematically to remove benefits derived from tall smokestacks and dispersion techniques. CAA section 302(k), defining "emission limitation," excluded intermittent controls by requiring emission limits to be continuous.⁷¹⁸ In *Alabama Power Co. v. Costle*,⁷¹⁹ D.C. Circuit upheld the GEP approach for modeling emissions from tall stacks based on regulations promulgated on November 3, 1977.⁷²⁰

EPA issued modified final regulations on February 8, 1982, which limits a smokestack for GEP purposes to two and one-half times the height of the facility.⁷²¹ The Natural Resources Defense Council (NRDC) and the Sierra Club challenged these regulations. The U.S. Court of Appeals for the District of Columbia Circuit held

715. See Risk Assessment for Toxic Air Pollutants: A Citizen's Guide - EPA 450/3-90-024 (Mar. 1991), available at http://www.epa.gov/oar/oaqps/air_risc/3_90_024.html (last visited Feb. 24, 2004).

716. See *Dow Chem. Co. v. EPA*, 635 F.2d 559 (6th Cir. 1980) (holding 1977 Amendment to CAA prohibited consideration of intermittent controls in EPA determination of attaining NAAQS). Intermittent controls are those used when atmospheric conditions are so poor that concentrations of air pollution build up. Intermittent controls allow less costly control because control may only be needed a few times a year, but their use requires sophisticated air monitoring capability which makes enforcement difficult for the government.

717. See 42 U.S.C. § 7423 (2000) (regulating stack heights).

718. In *Dow Chemical Co.*, the court upheld EPA's refusal to approve a revision to Michigan's SIP on the ground that it did not include solely continuous emissions control system. 635 F.2d at 561. In CAA § 123, stacks are exempted from control, as are intermittent controls, if they existed prior to December 31, 1970. Smelters, however, based on CAA § 119, can have intermittent controls. See *Bunker Hill Co. v. EPA*, 572 F.2d 1286 (9th Cir. 1977) (questioning technological feasibility of certain smelter operation modifications required by EPA regulations).

719. See 636 F.2d 323, 390 (D.C. Cir. 1979) (discussing 1977 CAA amendments).

720. See Approval and Promulgation of State Implementation Plans, 42 Fed. Reg. 57,459, 57,460 (Oct. 31, 1977) (codified at 40 C.F.R. pt. 52).

721. See Stack Height Regulations, 47 Fed. Reg. 5864 (Feb. 8, 1982) (codified at 40 C.F.R. pt. 51).

that based on the CAA's legislative, Congress had limited the use of intermittent controls, as well as credit for excessive stack height and dispersion techniques.⁷²² Three reasons were set forth:

First, dispersion techniques do not reduce the amount of pollution . . . but merely spread it . . . to other areas . . . Second, the long-range transport of certain pollutants was . . . linked to the formation of 'acid rain' Third, intermittent control systems, which are dependent on synchronizing plant operation with weather conditions, were thought to be unreliable and virtually impossible to enforce.⁷²³

In the 1982 final regulations, the GEP height was based on a two and a half times height formula for regulated stacks constructed before January 12, 1979.⁷²⁴ After January 12, 1979, a formula of height plus one and a half times the lesser of height or width was to be used for GEP calculations.⁷²⁵ The court upheld some provisions of the stack height regulations, reversed others, and remanded still other provisions to EPA for further action.⁷²⁶ The end result was that the tall stacks constructed before the change in the law avoided meaningful regulation.

On July 8, 1985, EPA promulgated new final regulations for CAA section 123.⁷²⁷ Seventeen years after CAA section 110 presented issues concerning the use of tall stacks to avoid air pollution controls, and more than ten years after CAA section 123 was enacted, the NRDC sued again. Once again, some aspects of the regulations were remanded, although most of the rule was upheld.⁷²⁸ The NRDC argued that it was impermissible to build a high stack to

722. See *Sierra Club v. EPA*, 719 F.2d 436, 440-41 (D.C. Cir. 1983), *cert. denied*, 468 U.S. 1204 (1984) (discussing criticism in Senate and House of intermittent controls as means of compliance with CAA's requirements).

723. *Id.* at 441 (explaining that dispersion techniques threaten to expose currently unpolluted areas to contamination and that acid rain in thought to reduce soil and water productivity).

724. *Id.* at 443 (defining "nearby" as distance from stack of five times lesser of height or width of structure itself, not to exceed 1/2 mile) (citing 47 Fed. Reg. 5869) (codified at 40 C.F.R. § 51.1(kk)).

725. See *id.* (noting second formula intended to reflect less severe effects of downwash from tall, thin structures).

726. See *id.* at 466-67 (affirming EPA's definition of "in existence," remanding for reconsideration of grandfather clause and 1+1.5 rule).

727. See Stack Height Regulation, 50 Fed. Reg. 27,892 (July 8, 1985) (codified at 40 C.F.R. pt 51) (limiting extent to which stack height may affect compliance with CAA).

728. See *NRDC v. Thomas*, 838 F.2d 1224 (D.C. Cir. 1988) (holding regulations on stack increases valid and some grandfather regulations invalid).

avoid excessive concentrations of emissions at ground level caused by atmospheric downwash from nearby structures or terrain unless the source was equipped with all feasible emission controls. The court held that existing or SIP-required emission rates are the baseline that can be used to support within-formula stack height increases.⁷²⁹ Therefore, existing plants with greater emissions than those allowed from new sources can use the high ground level concentrations of air pollution that result from high emissions to justify increases in stack height above the height normally allotted by GEP regulations. The court did require EPA to reconsider its decision to exempt an emission source from the requirements of 1985 stack height regulations under the CAA if the company raised its smoke stack heights within the limits of GEP before October 1983.⁷³⁰ The court objected to this exemption because EPA did not require the parties responsible for exempted sources to show reliance on the prior regulatory policy before they increased stack heights.⁷³¹ As a result of this opinion, EPA had to redraft regulations affecting emission limits for SO₂ at over 200 power plants.⁷³² The 1990 CAA

729. *See id.* at 1239 (rejecting argument of NRDC that use of existing emissions rates in within-formula demonstrations is prohibited by § 123 and that discrepancy between baseline assumptions renders within-formula demonstrations arbitrary and capricious).

730. *See id.* at 1245-46 (suggesting exemptions may have been motivated by needs to alleviate administrative burdens).

731. *See id.* at 1246 (noting any exemption should reasonably fit variations in regulatory history and degrees of reliance).

732. *See* Requirements for Preparation, Adoption, and Submittal of Implementation Plans, 40 C.F.R. pt. 51 (2003) (discussing regulations governing stack heights). Essentially, the regulation requires that the emissions limitation required of any source must not be affected by any dispersion technique, including a source's stack height that exceeds good engineering practice (GEP). *See* Stack height procedures, 40 C.F.R. §§ 51.118, 51.164 (2003). In addition to banning stack height that exceeds GEP, the regulations prohibit intermittent controls and improper manipulation of the exhaust gas plume. *See* 40 C.F.R. § 51.100(hh) (2003). GEP is defined as the greater of three different measures: (1) 65 meters; (2) for sources that relied on EPA's regulatory position and had a stack in existence on January 12, 1979, 2.5 x the height; or (3) for all other sources, $H + 1.5 \times L$, where H is the height of the structures and L is the lesser of the height or width. *Id.* at § 51.100(ii). A taller stack may be treated as GEP if the need for increased height is demonstrated by a fluid model or field study approved by EPA or a state or local control agency that ensures that the emissions from a stack do not result in excessive concentrations of any air pollutant. *Id.* at § 51.100(ii)-(3). The ground level concentration for sources seeding credit for heights greater than the GEP formula must be at least 40% greater than that which would be experienced without downwash, wakes or eddy effects. *Id.* at § 51.100(kk)(1). The use of any intermittent control system may also be considered when establishing an emission limitation for a pollutant under a SIP. Intermittent control systems, 40 C.F.R. § 51.119 (2003).

Additionally, regulations promulgated in 1988 affect § 123. Stack Height Emissions Balancing: Final Policy, 53 Fed. Reg. 480 (Jan. 7, 1988) (codified at 40

Amendments reduced the importance of stack heights, especially CAA subchapter IV.⁷³³ Controls are now to be imposed on all sulfur emissions, not just those measured as SO₂ at ground level. As a result, there is no need for new regulations.

§ 5(b). International Air Pollution - CAA Section 115

CAA section 115 deals with international air pollution.⁷³⁴ If the Administrator finds that air pollution may reasonably be anticipated to endanger public health or welfare in a foreign country and the Administrator determines the foreign country has essentially the same air pollution limits as are applicable in the United States, then EPA must promulgate rules to prevent the harm.

In *New York v. Thomas*,⁷³⁵ northeastern states and national groups sued, pursuant to CAA section 115, in the U.S. District Court for the District of Columbia to prevent emissions that caused acid rain in Canada. The court granted summary judgment and ordered EPA to issue SIP revision notices to force states to act to protect Canada from the effects of acid rain.⁷³⁶ This decision was upheld by the U.S. Court of Appeals for the District of Columbia Circuit.⁷³⁷ The district court ruled that EPA could make a new determination of reciprocity,⁷³⁸ but in October 1985, EPA's Administrator, Lee M. Thomas, found that reciprocity continued to exist.⁷³⁹

C.F.R. pt. 51). These regulations allow an "affected source" that must meet more stringent emissions limitations due to stack height regulations to meet its legal requirements by securing reductions from another source within the same state or interstate AQCR. *Id.* To rely on this provision, however, the affected source must show that total emissions will be reduced more than if the affected source met the emission limitations. *Id.* The affected source must also show that the area will attain the NAAQS and is designated as either a PSD area or is in the process of implementing an approved SIP. *Id.* at 481.

733. *But see* Kammer Power Plant; West Virginia; Stack Height Infeasibility Analysis, 63 Fed. Reg. 44,434 (Aug. 19, 1998) (rejecting power plant's infeasibility analysis).

734. *See* 42 U.S.C. § 7415 (2000) (protecting certain foreign countries from air pollution emitted in United States).

735. 613 F. Supp. 1472, 1476 (D.D.C. 1985).

736. *See id.* at 1486 (noting duty of EPA Administrator to comply with section 115 of Clean Air Act is nondiscretionary).

737. *See* *Thomas v. New York*, 802 F.2d 1443 (D.C. Cir. 1986) (reversing district court holding that findings by Administrator of EPA were rules subject to notice and comment requirements of APA).

738. *See* *New York v. Thomas*, 613 F. Supp. 1472, 1483-84 (D.D.C. 1985) (noting section 115 only to be invoked after determination by Administrator that foreign country involved shares same rights regarding international air pollution as granted to it by United States).

739. *See* *Thomas v. New York*, 802 F.2d at 1446 (noting district court stayed order to reassess Administrator Costle's finding of "reciprocity" to permit appeal by EPA).

The D.C. Circuit, however, reversed the district court's decision by holding that the original findings of endangerment and reciprocity by the prior Administrator, Douglas Costle, were rules under 5 U.S.C. § 551(4) of the Administrative Procedure Act (APA) and, therefore, notice and comment procedures were required to change them.⁷⁴⁰ The D.C. Circuit required the plaintiffs to file rulemaking petitions with EPA before they could bring a lawsuit to compel EPA to reduce emissions. A petition for rulemaking was filed with EPA in April 1988, and denied in October 1988, based on a claimed lack of knowledge as to whether emissions in the United States were causing acid rain in Canada. Nine states, the Province of Ontario and environmental groups brought suit in federal court in November 1988 to reverse EPA's decision.

In 1990, the D.C. Circuit once again upheld EPA, saying the Agency was not obliged to promulgate endangerment and reciprocity findings until it was able to determine specific pollution sources.⁷⁴¹ The court accepted EPA's claim that the endangerment could not be correlated to sources of pollution. Congress was capable of making such a connection, however, and the 1990 CAA Amendments require 110 specified electric power plants to reduce emissions of SO₂.⁷⁴² Thus, the 1990 subchapter IV program with its sulfur and nitrogen oxides reduction provisions is now a viable program for reducing both interstate and international air pollution from domestic stationary sources.⁷⁴³ The 1990 CAA Amendments added section 179B, which applies to nonattainment areas affected by emissions from outside the United States.⁷⁴⁴ If an affected state establishes to EPA's satisfaction that the SIP would be adequate to attain the NAAQS except for emissions emanating from outside the United States, the area would not be subject to the attainment date extension found in section 181(a)(5), the fee provisions of section

740. See *id.* at 1446-48 (discussing section 551(4) of APA).

741. See *Her Majesty The Queen In Right Of Ontario v. EPA*, 912 F.2d 1525, 1533-34 (D.C. Cir. 1990) (upholding EPA interpretation of section 115 noting if statute is silent or ambiguous, court must defer to agency's interpretation so long as it is reasonable and consistent with statutory plan) (citing *Chevron U.S.A. v. NRDC*, 467 U.S. 837, 843 (1984)).

742. See Clean Air Act § 404(e)(3) (Table A), 42 U.S.C. § 7651c(e)(3) (Table A) (2000) (listing SO₂ allowances of United States power plants).

743. See *Air Quality Problems on Border May Take International Cooperation, Officials Say*, Daily Env't Rep. (BNA), May 8, 1995, at B-1 (discussing air pollution in United States from Mexican emissions).

744. See 42 U.S.C. § 7509a (2000) (discussing attainment of ozone levels, carbon monoxide levels and PM-10 levels in international border areas).

185, and the bump-up provisions in section 181(b)(2).⁷⁴⁵ There are similar provisions concerning the CO nonattainment area provisions in section 187 and particulate nonattainment area provisions in section 188.⁷⁴⁶

§ 5(c). NO_x Control Under Subchapter IV

Electric utilities in 2002 were responsible for about twenty-two percent of United States NO_x emissions.⁷⁴⁷ Approximately eighty percent of electric utility NO_x emissions come from coal-fired plants of the type regulated by section 407 of the CAA.⁷⁴⁸ NO_x can be controlled using combustion controls or post-combustion controls. Combustion controls focus on the “three t’s” of combustion: temperature, time and turbulence. By reducing flame temperature, the residence time of fuel or fuel/air turbulence NO_x formation can be minimized.⁷⁴⁹ Other controls used to prevent NO_x formation during combustion include low-NO_x burners (LNBs), reburning, overfire air (OFA), and flue gas recirculation (FGR).⁷⁵⁰ Post-combustion controls include selective catalytic reduction (SCR) and selective noncatalytic reduction (SNCR). An alternative approach to NO_x control is to invest in new, combined cycle natural gas electric power plants and to encourage cogeneration. Existing NO_x control policies, however, do not encourage a transition to more fuel efficient and less polluting alternatives.⁷⁵¹

The 1990 CAA Amendments in subchapter IV created the first generally applicable federal NO_x controls applicable to existing

745. The statute has a typographical error and refers to section 182(a)(2) instead of 181(b)(2).

746. See Clean Air Act § 179B(c), (d), 42 U.S.C. § 7509a(c), (d) (2000) (discussing attainment of carbon monoxide levels and PM-10 levels for international border areas).

747. See U.S. Env'tl. Protection Agency, Summary of Clear Skies, 2 at www.epa.gov/air/clearskies/basic/html (last visited Aug. 24, 2003) (discussing EPA's modeling and analysis of Clear Skies Act).

748. See Clean Air Act § 407(b)(2), 42 U.S.C. § 7651f(b)(2) (2000) (requiring EPA Administrator to establish allowable NO_x emission limitations for utility boilers by January 1, 1997). See generally EPA Air Data website, at <http://www.epa.gov/air/data/index.html> (last visited Aug. 23, 2003) (providing air pollution data for entire United States).

749. See U.S. DEPARTMENT OF ENERGY, ET AL., REBURNING TECHNOLOGIES FOR THE CONTROL OF NITROGEN OXIDES EMISSIONS FROM COAL-FIRED BOILERS 5 (May 1999) [hereinafter TOPICAL REPORT NUMBER 14].

750. See *id.*

751. See Byron Swift, *Grandfathering New Source Review. and NO_x - Making Sense of a Flawed System*, Daily Env't Rep. (BNA), July 14, 2000, at B-1.

electric power plants.⁷⁵² The NO_x provisions are designed to achieve an approximate two million ton reduction in annual NO_x emissions by 2000 using 1980 as the base year,⁷⁵³ through improved control technology.⁷⁵⁴ This program imposes a \$2,000 per ton penalty, adjusted for inflation, on excess emissions.⁷⁵⁵

By May 15, 1992, the Administrator was to set emission limitations for NO_x for each type of boiler.⁷⁵⁶ Emission rates may not exceed 0.45 lb/mm Btu for tangentially fired boilers, and 0.50 lbs/mmBtu for dry bottom wall-fired boilers (other than units applying cell burner technology). These are called Group I boilers and their emissions are considered easier to control than Group II boilers. Group II comprise wet bottom wall-fired boilers, cyclones, cell burners and all other types of utility boilers that are not in Group I.⁷⁵⁷ Group I or II boilers may be Phase I or Phase II boilers depending on the time they are subject to emission limitations. The time for compliance is the same as the SO₂ control program.⁷⁵⁸ Phase I units are subject to these requirements after January 1, 1995.⁷⁵⁹ By January 1, 1997, EPA was to establish emission limitations for all other types of utility boilers.⁷⁶⁰ These Phase II boilers were to comply with the applicable requirements by January 1, 2000. In addition, EPA was to promulgate revised NSPS by January 1, 1994, under CAA section 111, for NO_x emissions from fossil-fuel fired steam generating units from both electric utility and nonutility units.⁷⁶¹ A NO_x limitation that is less stringent may be authorized if the operator demonstrates that the applicable emissions limitation cannot be met using the requisite low NO_x burners technology or other technology upon which the emission limitation was

752. See Clean Air Act § 407, 42 U.S.C. § 7651f (2000) (discussing NO_x emission reduction program).

753. See *id.* at 42 U.S.C. § 7651f(b) (discussing NO_x emission limitations).

754. See *id.* at § 7651f(b) (requiring Administrator to consider available technology, costs, energy and environmental impacts when establishing NO_x rates).

755. See *id.* at § 7651j(a), (c) (setting excess emissions penalty noting penalty shall be adjusted annually based on consumer price index).

756. See *id.* at § 7651f(b)(1) (requiring Administrator to establish annual allowable emission limitations for specified types of utility boilers no later than eighteen months after November 15, 1990).

757. See 42 U.S.C. § 7651f(b)(1),(2) (2000) (setting deadline date for Group II boilers at January 1, 1997).

758. See *id.* at § 7651f(a) (setting compliance deadlines for boilers).

759. See *id.* at § 7651f(b)(1) (discussing compliance deadline for Phase I units).

760. See *id.* at § 7651f(b)(2) (discussing deadline for EPA to establish emission limitations for other utility boilers).

761. See *id.* at § 7651f(c)(1) (noting revised standards must reflect improvements in emission and nitrogen oxide reduction methods).

based. A compliance extension is possible if the required technology is not immediately available.⁷⁶² An owner of two or more units subject to NO_x emission limitations may comply by using the average emission rate of all the units.⁷⁶³

On November 25, 1992, EPA promulgated two proposed rules concerning NO_x.⁷⁶⁴ The first rule, based on subchapter 1 of the CAA, required the industry to spend \$600 annually to control ozone. New sources were to install LAER technology and provide offsets. For existing units, reasonably achievable control technology is defined as technology that results in emissions at or below the emission limits specified in CAA section 407.⁷⁶⁵ The second proposed rule, based on subchapter IV, continued the controversy over the appropriate technology; two options were proposed and public comment was requested. The first option was more stringent and called for "overfire air" to be used in low NO_x burners. This option was supported by environmental groups, as well as state and local air pollution control officials. The second option excluded the need to use overfire air. Either proposal would have allowed utilities to average their emissions at one facility. A plant that could not meet emission standards after installing low NO_x burner technology would be allowed to meet a less stringent requirement.⁷⁶⁶

On March 22, 1994, EPA published the final NO_x rule⁷⁶⁷ that the CAA required to be published by May 15, 1992.⁷⁶⁸ The final

762. See Clean Air Act § 407(d), 42 U.S.C. § 7651f(d) (2000) (noting operator must show proper installation of control equipment, proper operation of such equipment for appropriate period of time and specified emission rate attainable or annual average rate).

763. See *id.* at § 7651f(e) (discussing procedure for determining compliance based on annual average emission rates of multiple units).

764. See State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 55,620 (proposed Nov. 25, 1992) (codified 40 C.F.R. pt. 52) (discussing new NO_x requirements); see also Acid Rain Program; Nitrogen Oxides Emission Reduction Program, 57 Fed. Reg. 55,632 (proposed Nov. 25, 1992) (codified at 40 C.F.R. pt. 76) (discussing proposed rule establishing nitrogen oxides emission limitations and other requirements and procedures for coal-fired utility units).

765. See State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clear Air Amendments of 1990, 57 Fed. Reg. at 55,620 (discussing new NO_x requirements).

766. See *Utility Limits on NO_x to Curb Acid Rain, Guidance for Ozone Control Announced by EPA*, 23 Env't Rep. (BNA) 1668 (Oct. 30, 1992).

767. See Acid Rain Program; Nitrogen Oxides Emission Reduction Program, 59 Fed. Reg. 13,538 (Mar. 22, 1994) (codified at 40 C.F.R. pt. 76 (2003)) (promulgating standards establishing NO_x emission limitations and other requirements and procedures for coal-fired utility units).

768. See Clean Air Act § 407(b), 42 U.S.C. § 7651f(b) (2000) (discussing NO_x emission limitations).

rule included "overfire air" as low-NO_x burner technology. Both tangentially fired boilers and dry bottom boilers were to use this technology by January 1, 1995, if they exceeded NO_x emissions set by the CAA. This rule affected about 180 plants.⁷⁶⁹ The rule was challenged by the Alabama Power Company and the National Coal Association. The court was asked to decide whether low NO_x burner technology includes overfire air technology. The petitioners argued that requiring overfire air was an interpretation more stringent than Congress intended. The court in *Alabama Power Co. v. EPA*, held that low NO_x burner technology did not include overfire air.⁷⁷⁰

On April 13, 1995, in response to the court's remand, EPA issued a new final rule that revised the definition of low NO_x burner technology to comply with the court's decision.⁷⁷¹ It set emission limits for all Phase I and Phase II dry bottom wall-fired and tangentially fired boilers (Group 1) in the United States that combust coal as a primary fuel. Other changes included new requirements for compliance extensions for Phase I NO_x emission limitations, new requirements for alternative emission limitations (AEL), and changes in the provisions concerning averaging of NO_x emissions from two or more units. In general, the regulatory changes reduced compliance requirements, extended the compliance date and increased compliance flexibility. The revisions were estimated to reduce NO_x emissions by 1.54 million tons per year by the year 2000. EPA approved compliance plans on August 11, 1995, under which units must comply with the applicable emission limitations under 40 C.F.R. § 76.5 (the "standard emission limitations") or with a NO_x averaging plan under 40 C.F.R. § 76.10.⁷⁷²

The Phase I standards applied to 265 coal-fired electric power producing units. One hundred seventy-eight units met the rate limits by using low-NO_x burners. Ten units were granted less stringent

769. See *Power Plant Ash Appeals Court to Eliminate Overfire Technology Requirements in EPA Rule*, 25 Env't Rep. (BNA) 1260 (Oct. 28, 1994).

770. See *Alabama Power Co. v. EPA*, 40 F.3d 450, 455 (D.C. Cir. 1994) (vacating EPA Nitrogen-Oxide regulation including "overfireair" as low burner technology); see generally Sheryl-Lynn Caroff, *Court of Appeals Vacates EPA Nitrogen Oxide Regulation in Alabama Power Company v. EPA*, *EPA Issues New Rule in Response*, 1 ENVTL. LAW. 915 (1995) (examining vacated EPA regulation, court's decision, industry and EPA reactions, and revised regulation).

771. See Acid Rain Program: Nitrogen Oxides Emission Reduction Program, 60 Fed. Reg. 18,751 (Apr. 13, 1995) (codified at 40 C.F.R. pt. 76).

772. See Acid Rain Program: Acid Rain Compliance Plans and Exemptions, 60 Fed. Reg. 41,068-02 (Aug. 11, 1995) (issuing nitrogen oxides compliance plans and exemptions from permitting and monitoring requirements of Acid Rain Program for 74 utility units at 36 plants).

alternative emission limits; twenty-three met the requirements without modification and the rest of the units complied using the CAA's averaging provisions.⁷⁷³ Emissions are expected to rise with increased electric power production because NO_x emissions are not capped.⁷⁷⁴ For electric utilities in the eastern United States, however, NO_x emissions also are subject to the controls discussed *infra* to abate interstate air pollution transport.

On January 19, 1996, EPA released its proposed rule implementing Phase II of the NO_x reduction provisions in CAA section 407(b)(2).⁷⁷⁵ The proposal established NO_x emissions limitations for some coal-fired utility limits, and revised limitations for others. It proposed lower Group 1 boiler emission limits (wall-fired and tangentially fired boilers) and new Phase II emission limits for coal fired Group 2 boilers (wet bottom boilers, cyclone boilers, cell burner boilers and all other types of boilers that are not Group 1 boilers).⁷⁷⁶ On December 19, 1996, EPA promulgated a final rule for its Phase II NO_x emissions reduction program,⁷⁷⁷ which applies to NO_x emissions for Group 1 and 2 boilers after January 1, 2000. The rule established NO_x emissions limitations on a pounds per million Btu annual average basis.⁷⁷⁸ EPA concluded that low NO_x burner technology was available for Group 1 boilers beginning in the year 2000. Therefore, EPA set an emission standard of 0.46 lb/mm Btu based on that technology for dry bottom wall-fired boilers and 0.40 lb/mm Btu for tangentially fired boilers.⁷⁷⁹ The Agency also set emission limitations for various types of Group 2 boilers.⁷⁸⁰

The revised NO_x emission limits for Group 1 and 2, Phase II boilers were challenged by electric utilities and industry groups in

773. See Byron Swift, *Command Without Control: Why Cap-and-Trade Should Replace Rate Standards for Regional Pollutants*, XXXI ENVTL. L. REPTR. NEWS & ANALYSIS (ELI) 31:10330 (Mar. 2001).

774. See *id.*

775. See Acid Rain Program; Nitrogen Oxides Emission Reduction Program, 61 Fed. Reg. 1442 (proposed Jan. 19, 1996) (codified at 40 C.F.R. pt. 76) (implementing second phase of Nitrogen Oxides Reduction Provisions in Title IV of CAA).

776. See Acid Rain Program; Nitrogen Oxides Emissions Reduction Program, 61 Fed. Reg. 67,112, 67,113 (Dec. 19, 1996) (codified at 40 C.F.R. pt. 76) (promulgating standards for second phase of Nitrogen Oxides Reduction Program under Title IV of CAA, establishing and revising NO_x emission limitations for certain coal-fired electric utility units).

777. See *id.* at 67,112 (promulgating new EPA standards for NO_x reduction program).

778. See *id.* at 67,113 (indicating measurement units for NO_x limitations).

779. See *id.* (setting emissions limit dry-bottom wall-fired boilers and tangentially fired boilers).

780. See *id.* at 67,114 (setting emissions limit for Group 2 boilers).

the D.C. Circuit. The court, on February 13, 1998, upheld most of the challenged rule based on its finding that EPA had not exceeded its authority and the court's deference to the Agency concerning judgments on scientific and technical matters.⁷⁸¹ The court, however, did remand to EPA the portion of the final rule that reclassified certain retrofitted cell burner boilers as wall-fired boilers, for reconsideration or a more adequate justification.⁷⁸² On May 1, 1998, EPA formally removed the remanded provision from the final rule.⁷⁸³ EPA then revised its regulations to treat as a cell burner boiler, any boiler constructed as a cell burner boiler and converted to the burner configuration of a wall-fired boiler.⁷⁸⁴ Only one boiler was expected to be affected by the revision.⁷⁸⁵

On January 29, 2001, American Electric Power announced plans to control NO_x at two of its coal-fired 43 plants in West Virginia with selective catalytic reduction, but to use urea that is converted to ammonia.⁷⁸⁶ On June 21, 2000, Wisconsin Electric Power Co. (WEPCO) announced it would make major reductions in air emissions from five of its coal-fired plants by using low-NO_x burners, overfire air, selective noncatalytic reduction (SNCR) and selective catalytic reduction (SCR).⁷⁸⁷

On August 17, 2000, EPA issued a notice of its preliminary draft of pending guidance on BACT for NO_x Control on Combined Cycle Turbines.⁷⁸⁸ Selective Catalytic Reduction (SCR) has been considered BACT for many natural gas combined cycle turbines, but EPA was considering a more case-specific determination of BACT. These technology requirements to control NO_x favor old,

781. See generally *Appalachian Power Co. v. EPA*, 135 F.3d 791 (D.C. Cir. 1998) (summarizing basic holding).

782. See *id.* at 822 (remanding to EPA to reconsider definitional classification of retrofitted cell burners).

783. See Acid Rain Program; Nitrogen Oxides Emission Reduction Program, Final Rule in Response to Court Order, 63 Fed. Reg. 24,116-02 (May 1, 1998) (changing effective date of rule).

784. See Acid Rain Program-Nitrogen Oxides Emission Reduction Program. Rule Revision in Response to Court Remand, 64 Fed. Reg. 55,834 (Oct. 15, 1999) (noting revision to redefine cell boilers).

785. See Pamela Najor, *EPA Revises Acid Rain Regulation For Coal-Fired Boilers Due to Court Action*, Daily Env't Rep. (BNA), Oct. 18, 1999, at A-9 (noting effect of final EPA rule revision).

786. See Steve Cook, *Utility Installing NO_x Controls at Two W. Va. Plants at Cost of \$230 Million*, Daily Env't Rep. (BNA), Feb. 2, 2001, at A-9.

787. See Julie Cohen, *Wisconsin Utility Proposes Plan To Cut SO₂ and NO_x at Five Plants*, Daily Env't Rep. (BNA), July 25, 2000, at A-9.

788. See Notice of Availability for Draft Guidance on BACT for NO_x Control at Combined Cycle Turbines, 65 Fed. Reg. 50,202 (Aug. 17, 2000) (generally referring to notice of availability).

dirty coal-fired plants. Old sources are subject to standards set at 0.45 to 0.50 lb/mm Btu, but new plants must meet a 0.15 lb/mm Btu standard. Some old units emit at levels as high as 2.0 lbs/mm Btu.⁷⁸⁹ Existing oil-fired and gas-fired plants are subject to an emission limit of 0.20 to 0.30 lb/mm Btu.⁷⁹⁰ New gas-fired facilities are subject to state standards as low as 0.02 lb/mm Btu, an order of magnitude more stringent than existing oil and gas facilities and two orders of magnitude more stringent than some old units.⁷⁹¹ This may discourage investment in new equipment.⁷⁹²

§ 5(d). Interstate Air Pollution Control

Since 1970, the CAA's subchapter I has focused primarily on achieving local ambient air quality standards, but there are exceptions.⁷⁹³ The 1970 CAA Amendments required the SIP to assure that emissions of air pollutants would not interfere with the attainment or maintenance of any national ambient air quality standard (NAAQS) in any portion of such region outside of the state.⁷⁹⁴ This provision continues, with slightly different wording as CAA section 110(a)(2)(D), which prohibits stationary sources from emitting air pollution that prevents any other state from meeting a NAAQS or interferes with another state's SIP provisions concerning PSD or visibility measures.⁷⁹⁵ Section 110 does not enable EPA to force a particular control measure on the states.⁷⁹⁶ CAA section 110(k)(5) allows EPA's Administrator to require any inadequate SIP to be re-

789. See Swift, *NSR*, *supra* note 751, at B-1.

790. See Standards of Performance for New Stationary Sources, 40 C.F.R. §§ 60.44, 60.44a (2003) (noting limits of NO_x emission in certain plants).

791. See Swift, *supra* note 751, at B-2.

792. See *id.*

793. See Committee on Environment and Public Works, Clean Air Amendments of 1989, S. REP. NO. 101-228 at 289 (1989).

794. See Pub. L. No. 91-604 § 110(a)(2)(E).

795. See 42 U.S.C. § 7410(a)(2)(D) (2000). Clean Air Act section 110(a)(2)(D)(i) provides that SIPs shall not:

(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary air quality standard, or

(II) interfere with measures required to be included in the applicable implementation plan for any other State under part C to prevent significant deterioration of air quality or to protect visibility.

Id. at § 7410(a)(2)(D)(i).

796. See *Virginia v. EPA*, 108 F.3d 1397, 1406 (D.C. Cir. 1997), *modified* 116 F.3d 499 (1998) (noting lack of EPA to force control measures on states); *see also Train v. NRDC*, 421 U.S. 60, 79 (1975) (reiterating EPA's relationship to state control measures).

vised.⁷⁹⁷ Emissions from small sources, if significant when combined with emissions from other sources in an upwind area, may be included in a section 110(k)(5) SIP call.⁷⁹⁸ Only federal standards, not more stringent state standards, can be enforced as an interstate pollution abatement effort.⁷⁹⁹

Section 126 is the other CAA provision designed to prevent adverse impacts on downwind states from air pollutants traveling from upwind states.⁸⁰⁰ In the past, EPA was reluctant to use this provision. Though it has not been an effective air pollution control tool, it is now more important.⁸⁰¹ States or political subdivisions may petition pursuant to section 126 for such a finding, and the Administrator must act on the petition.⁸⁰² From 1977 to 1998 EPA never granted a petition filed under section 126, nor did it disapprove a SIP revision due to inadequate control of interstate air pollution transport.⁸⁰³ Pennsylvania, New York and Maine petitioned EPA, pursuant to CAA section 126, alleging violation of NAAQS and impairment of air visibility because of SO₂ emissions released in seven midwestern states. After extensive proceedings at EPA on the three petitions and an eleven month comment period that ended in May 1982, the three petitioning states successfully sued seeking an order requiring EPA to rule on the petitions.⁸⁰⁴

797. See 42 U.S.C. § 7410(k)(5) (2000) (discussing changing air quality plans when no longer adequate).

798. See *New York v. EPA*, 852 F.2d 574 (D.C. Cir. 1988). See generally *Air Pollution Control Dist. of Jefferson County, Kentucky v. EPA*, 739 F.2d 1071 (6th Cir. 1984) (discussing SIPs standards).

799. See *Connecticut v. EPA*, 656 F.2d 902, 910 (2d Cir. 1981) (noting final ruling that EPA trumps state law); see also Timothy Talkington, Note, *Interstate Air Pollution Abatement and the Clean Air Act Amendments of 1990: Balancing Interests*, 62 U. COLO. L. REV. 957, 961-64 (1991) (discussing supremacy of federal law).

800. See generally 42 U.S.C. § 7426 (2000) (indicating rules for interstate pollution).

801. See, e.g., *S.W. Pa. Growth Alliance v. Browner*, 121 F.3d 106 (3d. Cir. 1997) (illustrating case). One writer has chronicled EPA's reticence to use its powers under section 126. See Vickie L. Patton, *The New Air Quality Standards, Regional Haze, and Interstate Air Pollution Transport*, 28 ENVTL. L. REP. (Envtl. L. Inst.) 10,155 (Apr. 1998); see also generally Karl James Simon, *The Application and Adequacy of the Clean Air Act in Addressing Interstate Ozone Transport*, 5 ENVTL. LAW. 129 (Sept. 1998).

802. See Clean Air Act § 126(b), 42 U.S.C. § 7426(b) (2000) (stating process for petitioning Administrator for violations of air pollutant prohibitions).

803. See Patton, *supra* note 801, at 10,166.

804. See *New York v. Ruckelhaus*, 14 ENVTL. L. REP. (Envtl. L. Inst.) 20,873 (D.D.C. Oct. 5, 1984) (no official reporter).

On December 10, 1984, EPA published a denial of each state's petition.⁸⁰⁵ The states then appealed. The United States Court of Appeals for the District of Columbia Circuit denied relief to the states in a decision that interpreted section 126 to make it very difficult for a state impacted by interstate transport of pollutants to use the provision.⁸⁰⁶ For example, the court required the complaining state to show by monitoring data that violations of NAAQS occurred, but at the same time gave deference to EPA's models that showed no violation of NAAQS. The D.C. Circuit also construed section 126 to require focusing on major sources within an emitting state, rather than reviewing broadly the upwind states' emissions.⁸⁰⁷

Under the 1990 CAA Amendments, Congress modestly expanded the scope of section 126 by adding "group of stationary sources" to the sources subject to the section's requirements.⁸⁰⁸ The scope of CAA section 110(a)(2)(D) also was expanded to prohibit air pollution that "contribute[s] significantly" to nonattainment rather than the more limited "prevent[s] attainment" language used prior to 1990.⁸⁰⁹ Section 126(c) provides that a major new or modified source may not be constructed or operated in violation of sections 110(d)(2)(D)(ii) or 126 after EPA's Administrator has made a finding that violations have or will occur.⁸¹⁰ For an existing source to operate more than three months after the Administrator has made a section 126(b) finding, it must comply with the emissions limitations and compliance schedule imposed by the Administrator as required by section 110(a)(2)(D)(ii); compliance may be extended for up to three years after the date of the finding if the source complies with emission limitations and compliance schedules.⁸¹¹

805. See Interstate Pollution Abatement, Final Determination, 49 Fed. Reg. 48,152 (Dec. 10, 1984) (codified at 40 C.F.R. pt. 52) (discussing denial of three states' petitions to § 126 Clean Air Act).

806. See *New York v. EPA*, 852 F.2d 574 (D.C. Cir. 1998) (noting example of court's interpretation of § 126); see also *Connecticut*, 656 F.2d 902 (2d Cir. 1981) (citing case as example of federal law taking precedence); *Air Pollution Control Dist. of Jefferson County*, 739 F.2d 1071 (6th Cir. 1984).

807. See *New York*, 852 F.2d at 574 (D.C. Cir. 1988) (noting language of § 126).

808. See Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399, 2469 (modifying § 126); see also Talkington, *supra* note 799.

809. See Talkington, *supra* note 799 (covering 1990 CAA Amendment to § 126 and case law concerning this section).

810. See 42 U.S.C. § 7426(c) (2000) (noting violations).

811. See *id.* at § 7426(c) (indicating Administrator may permit continuing operation).

In the mid 1990s, the Northeastern states began to aggressively push for more effective controls over the Midwest states' NO_x emissions. In 1995 the Environmental Council of States (ECOS) recommended forming a national work group to develop a consensus solution to the ozone transport problem.⁸¹² This led to the creation of the Ozone Transport Assessment Group (OTAG), whose membership included EPA, thirty-seven eastern and midwestern states and the District of Columbia, industry representatives and environmental groups. OTAG developed "the most comprehensive analyses of ozone transport ever conducted."⁸¹³ This work was followed by EPA's final rule (a.k.a. SIP call) that requires twenty-two states and the District of Columbia to submit SIP revisions to achieve specified quantities of NO_x reduction in the eastern half of the United States.⁸¹⁴

The Ozone Transport Commission (OTC), in 1996, developed a Memorandum of Understanding (MOU) requiring each state to lower its emissions by a specified number of tons. Massachusetts led the way by moving to develop a state emissions allocation and trading plan for NO_x reduction. On July 26, 1996, officials announced a plan to reduce NO_x emissions by fifteen percent by 1999.⁸¹⁵ The plan involved twenty-three of the states' largest utilities and created a permanent cap on NO_x emissions. Sources were to determine how to reduce emissions in a cost-effective way using a trading mechanism to buy or sell NO_x allowances.⁸¹⁶

On March 18, 1997, the Northeast States for Coordinated Air Use Management (NESCAUM) released a report saying the northeast states would not succeed in meeting ozone NAAQS unless Midwest sources of NO_x reduced their emissions.⁸¹⁷ The NESCAUM

812. Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57356-01, 57361 (Oct. 27, 1998) (codified at 40 C.F.R. pts. 51, 72, 75, 96 (2003)) [hereinafter SIP Call].

813. See *id.* at 57,362 (discussing OTAG); see also Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 62 Fed. Reg. 60,318-01, 60,376, app. B (Nov. 7, 1997) (codified at 40 C.F.R. pt. 52) (stating OTAG recommendations).

814. See generally SIP Call, 63 Fed. Reg. at 57,355 (noting final rule).

815. See Clean Air Act § 176A, 42 U.S.C. § 7506a (2000) (allowing interstate transport committees).

816. See *Massachusetts: State, Energy Producers Agree to Reduce Nitrogen Oxide Emissions by 15 Percent*, Daily Env't Rep. (BNA), July 30, 1996 at B-1 (describing MA plan).

817. See Alec Zacaroli, *Air Pollution: Study Says Fixing Northeast Ozone Problem Requires Deep Cuts in Midwestern Emissions*, Daily Env't Rep. (BNA), Mar. 19, 1997, at A-5 (discussing Midwest's need to cut emissions).

study showed that at the western and southern boundaries of the ozone transport region (OTR) ozone levels of 0.08 ppm to 0.12 ppm were found in the early morning hours before photochemical activity could produce ozone, which indicates ozone transport.⁸¹⁸ Three aircraft measurements at the OTR boundary recorded ozone levels above 0.10 ppm in July 1995, which also supported NESCAUM findings that ozone transport from the Midwest was having a significant impact on the Northeast states.⁸¹⁹

On August 14, 1997, EPA received section 126 petitions from Connecticut, Maine, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island and Vermont seeking relief from NO_x emissions allegedly coming from as far as Louisiana in the southwest, Georgia in the southeast and Minnesota in the west.⁸²⁰ The petitions targeted different geographic areas in the eastern United States. All the petitions identified electric power generating plants as a source category, but they varied concerning the other industrial categories identified. Some petitions identified specific electric power plants.⁸²¹ The petitions also varied regarding the remedy requested.⁸²² On October 6, 1997, a group representing Midwestern electric utilities filed suit in the D.C. Circuit⁸²³ challenging EPA's authority to regulate electric power plants based on petitions filed by Northeastern states under CAA section 126.⁸²⁴

Eight states petitioned EPA under section 126. On February 25, 1998, these states filed a complaint in the Southern District of New York to compel the Agency to act.⁸²⁵ EPA and the state peti-

818. See *id.* (giving results of aircraft measurements). The OTR consists of the twelve northeast states ranging from Maine to Virginia and the District of Columbia.

819. See *id.*; see also THE COST OF OZONE TRANSPORT: ACHIEVING CLEAN AIR IN THE EAST (Northeast States for Coordinated Air Use Management July 1998).

820. See Alec Zacaroli, *Petitions From Northeast States Ask EPA to Cut Emissions From Hundreds of Sources*, Daily Env't Rep. (BNA), Aug. 15, 1997, at D-2; see also *Eight Northeastern States Petition EPA For Direct Action on Transported Pollution*, 28 Env't Rep. (BNA) 709 (Aug. 15, 1997) (describing New England states' petition to EPA to regulate emissions).

821. See Finding of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 63 Fed. Reg. 56,292, 56,296 (proposed Oct. 21, 1998) (describing alleged sources) (codified at 40 C.F.R. pts. 52, 97) [hereinafter Proposed 126 Rule].

822. See *id.* at 56,297 (indicating chart summarizing eight state petitions).

823. See *Midwest Ozone Group v. EPA*, No. 97-1627 (D.C. Ca. Oct. 6, 1997).

824. See Alec Zacaroli, *Air Pollution: Midwest Utility Group Sues EPA to Block Petitions by Northeastern States for NO_x Cuts*, Daily Env't Rep. (BNA), Oct. 10, 1997, at A-5 (discussing lawsuit).

825. See 63 Fed. Reg. 56,291, 56,299 (proposed Oct. 21, 1999) (citing *Connecticut v. Browner*, No. 98-1376).

tioners reached a settlement agreement on the section 126 suit that was published on March 5, 1998, with a request for comments.⁸²⁶ EPA published an Advance Notice of Proposed Rulemaking (ANPRM) on April 30, 1998, that met the first milestone in the Proposed Consent Decree.⁸²⁷ On October 21, 1998, EPA released its notice of proposed rulemaking (NPRM) concerning the section 126 petitions.⁸²⁸ The NPRM stated that portions of the petitions were technically meritorious, but EPA proposed to act at a later date after the states had the opportunity to reply to its planned SIP call. The NPRM described the schedule and conditions that would trigger findings of applicability and the proposed requirements that would apply. It proposed to deny certain petitions, in whole or in part.⁸²⁹ As part of the proposed section 126 rule, EPA proposed a federal NO_x trading program.⁸³⁰ This is a market-based system with caps on emissions from upwind states from certain sources that involves aggregating the source allocations in each state for units that are required to participate in the NO_x trading program.⁸³¹ This "cap-and-trade" program would be used to meet the state's NO_x emissions budget.⁸³²

On October 27, 1998, EPA promulgated a "SIP call."⁸³³ The rule, which became effective on December 28, 1998, applies to facil-

826. See Proposed Settlement Agreement; Ozone Transportation in Eastern United States; Section 126 Petitions Filed by Northeastern States, 63 Fed. Reg. 10,874 (Mar. 5, 1998).

827. See Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 63 Fed. Reg. 24,058 (Apr. 30, 1998) (codified at 40 C.F.R. pt. 52).

828. See Findings of Significant Contributions and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 63 Fed. Reg. 56,291 (proposed Oct. 21, 1998) (noting generally proposed rule).

829. See *id.* (discussing proposal in notice).

830. See *id.* at 56,309 (discussing details of EPA's budget trading program).

831. See *id.* (likening NO_x trading program to economic marketing program).

832. See generally Approval and Promulgation of Air Quality Implementation Plans; New Hampshire, New Hampshire-Nitrogen Oxides Budget and Allowance Trading Program, 65 Fed. Reg. 68,111-01 (proposed Nov. 14, 2000) (codified at 40 C.F.R. pt 52); U.S. Environmental Protection Agency, Fact Sheet, Final Rule For Reducing Transport of Ground-Level Ozone (SMOG) and Two Related Proposals 1 (Sept. 24, 1998); Jamie Larmann, *Comparing Apples To Oranges? EPA Faces Difficulties In Bringing To Fruition An Emissions Trading Program For NO_x*, 6 ENVTL. L. 603 (2000).

833. See generally Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57,355 (Oct 27, 1998) (codified at 40 C.F.R. pts. 51, 72, 75, 96) (noting rule) [hereinafter SIP Call].

ities in the eastern half of the United States.⁸³⁴ The covered area includes Alabama and Georgia to the south, Massachusetts to the north, and Wisconsin, Illinois and Kentucky to the west.⁸³⁵ The rule subjected twenty-two states and the District of Columbia to its requirements, more states than are subject to the section 126 rule, but all states affected by the section 126 rule also are subject to the SIP call. The rule requires SIP revisions to meet the requirements of section 110(a)(2)(D)(i)(1) to prevent NO_x emissions in amounts that "contribute significantly to nonattainment in, or interfere with maintenance by," a downwind state.⁸³⁶ SIP revisions were to be submitted by September 30, 1999, projecting NO_x reductions that met the NO_x emissions budget specified in the rule.⁸³⁷ EPA's SIP call did not change the technology-based NO_x requirements under CAA subchapter IV, which continue to apply.⁸³⁸ EPA subsequently proposed a federal implementation plan (FIP) to be used if a state failed to revise its SIP in a manner that is satisfactory to the Agency.⁸³⁹ By early 1999, at least twenty-nine lawsuits had been filed challenging the regulation, including nine petitions from states.⁸⁴⁰

EPA developed a NO_x budget for the states based on an emissions limit of 0.15 lbs of NO_x/mm Btu heat input for electric generating units (EGU) and reductions of sixty percent from non-EGU boilers and turbines with emissions of one or more tons/day. Stationary internal combustion engines are to reduce emissions by ninety percent. Cement manufacturing plants are to provide reductions of thirty percent.⁸⁴¹ The new rule required that states reduce NO_x from electric generating units by 77% in West Virginia, 73% in Illinois, 71 % in Missouri, and 70% in Ohio. Seventeen of the twenty-three jurisdictions subject to the rule must reduce emissions over fifty percent. Of the states subject to the rule, only the

834. See James Kennedy & Martha Kessler, *Air Pollution: States May Force EPA Action On Clean Air Act Section 126 Petitions*, Daily Env't Rep. (BNA), Oct. 16, 1997, at A-7 (noting when EPA rule effective).

835. See SIP Call, *supra* note 833, at 57,356 (noting effective date and location of covered facilities).

836. See *id.* at 57,358 (describing application).

837. See *id.* (noting revision deadline).

838. See *id.* at 57,359, 57,476 (discussing trading program).

839. See *generally id.* at 57,355 (noting rules' design).

840. See Alec Zacaroli, *States Expected Not to Meet Deadline For Submitting Ozone Transport Rule Plans*, Daily Env't Rep. (BNA), Jan. 13, 1999, at AA-1 (noting pending lawsuits).

841. See SIP Call, *supra* note 833, at 57,365 (noting determination of budgets).

District of Columbia and Rhode Island will not have to cut emissions; but they will be subject to a NO_x emissions budget.⁸⁴²

The state budgets required an overall twenty-eight percent reduction in NO_x during the ozone season⁸⁴³ that was subsequently changed to twenty-five percent as a result of an increase in the emissions inventory baseline.⁸⁴⁴ The final rule allows states to decide where the reductions are to be made. The SIP revisions were to be fully implemented by May 1, 2003.⁸⁴⁵ A provision for a "Compliance Supplemental Pool", however, provides flexibility to states to deal with excess emissions from sources that are unable to meet the compliance deadline in the 2003 and 2004 ozone seasons.⁸⁴⁶ EPA's control strategy to meet the NO_x reduction requirements includes using post-combustion controls such as selective catalytic reduction [SCR], selective noncatalytic reduction [SNCR] and combustion controls such as low NO_x burners and overfire air.⁸⁴⁷ On May 14, 1999, EPA promulgated revised NO_x emission budgets for twenty-two states and the District of Columbia.⁸⁴⁸

On May 25, 1999, EPA announced that the section 126 permit petitions were technically meritorious, but the Agency was deferring action on the petitions pending action by the states pursuant to its NO_x SIP call.⁸⁴⁹ EPA's decision to defer to its SIP call approach, backed up by a proposed federal implementation plan (FIP),⁸⁵⁰ was based on the overlap of the section 110 and section 126 approaches and the advantages that EPA perceived would come from using the section 110 SIP call approach. The SIP call requires emission reductions from all sources, but the 126 petitions were

842. *See id.* at 57,434-35 (showing table of states' required reductions NO_x emissions).

843. *See id.* at 57,439 (discussing state budgets).

844. *See* Technical Amendments to the Findings of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone, 64 Fed. Reg. 26,298, 26,299 (May 14, 1998) (codified at 40 C.F.R. pt. 51).

845. *See* SIP Call, *supra* note 833, at 57,366 (noting date of SIP revisions).

846. *See id.* at 57,428 (indicating provisions for states not meeting deadlines).

847. *See id.* A supplemental notice of proposed rulemaking, technical corrections and notice of availability was promulgated at 64 Fed. Reg. 10,341 (March 5, 1999).

848. *See* Technical Amendments to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone, 64 Fed. Reg. at 26,298 (noting effect of rule).

849. *See generally* Findings of Significant Contribution on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 28,250 (May 25, 1999).

850. *See generally* Federal Implementation Plans to Reduce the Regional Transport of Ozone, 63 Fed. Reg. 56,394 (proposed Oct. 21, 1998) (codified at 40 C.F.R. pts. 52, 98).

limited to addressing emissions from upwind sources. If EPA grants section 126 petitions, the Agency must promulgate requirements for emission sources; but by using the SIP call, it is the states that must promulgate the requirements for the sources.⁸⁵¹

On May 25, 1999, the D.C. Circuit issued an order staying the NO_x SIP call.⁸⁵² Because the compliance date was linked to the SIP submission date, the stay created uncertainty concerning the compliance date. In response, EPA revised the section 126 rule on January 18, 2000 by making the findings of significant contributions, granting the relevant portions of the section 126 petitions, and delinking the section 126 findings from compliance with the NO_x SIP call.⁸⁵³ This was done because there was no longer any effective program being developed as part of the SIP call for addressing interstate pollution, but the Agency's new rule contained a provision withdrawing its findings upon approval of a NO_x SIP in accordance with the October 1998 SIP call.⁸⁵⁴ On March 2, 2000, EPA revised the statewide emissions budgets again for the twenty-two states and the District of Columbia that are subject to the NO_x SIP call.⁸⁵⁵ On March 3, 2000, a three-judge panel of the D.C. Circuit upheld the NO_x SIP call for nineteen states and the District of Columbia,⁸⁵⁶ but vacated it for Wisconsin, Georgia and Missouri because of an inadequate record.⁸⁵⁷ This results in nineteen states and the District of Columbia being subject to the SIP call. Only twelve states and the District of Columbia are subject to section 126 requirements.⁸⁵⁸

851. *See id.* at 56,294-95.

852. *See* *Michigan v. EPA*, No. 98-1497 (D.C. Cir. May 25, 1999); *see also* Tony Kreindler, *Appeals Court Delays SIP Deadline Pending Review of Challenge to NO_x Rule*, Daily Env't Rep. (BNA), May 27, 1999, at AA-1 (discussing Court's stop to EPA Rule); Alec C. Zaccaroli, *Court Rulings Imperil EPA's Efforts to Clamp Down on Ozone Pollution*, Daily Env't Rep. (BNA), June 21, 1999, at B-1.

853. *See generally* Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 65 Fed. Reg. at 2674.

854. *See id.* (indicating relationship to Oct. 1998 rule).

855. *See* Technical Amendment to the Finding of Significant Contribution and Rulemaking for Certain States for Purposes of Reducing Regional Transport of Ozone, 65 Fed. Reg. 11,222 (2000) (codified at 40 C.F.R. pt. 51).

856. *See* *Michigan v. EPA*, 213 F.3d 663 (D.C. Cir. 2000); *see also* Alec C. Zaccaroli, *Court Rulings Imperil EPA's Efforts to Clamp Down on Ozone Pollution*, Daily Env't Rep. (BNA), June 21, 1999, at B-1.

857. *See* *Michigan*, 213 F.3d at 681 (vacating SIP call).

858. *See* LARRY B. PARKER & JOHN E. BLODGETT, *AIR QUALITY AND INITIATIVE TO INCREASE POLLUTION CONTROLS 3* (Cong. Res. Serv. Rept. for Congress, Mar. 9, 2001).

On June 24, 1999, EPA issued an interim final rule to temporarily stay the May 25, 1999 rule until November 30, 1999.⁸⁵⁹ The stay was intended to give EPA time to address the *American Trucking Association v. EPA* decision issued by the United States Court of Appeals for the District of Columbia Circuit that remanded the eight-hour ozone standard.⁸⁶⁰ The "SIP call" was the subject of a motion to stay, brought by industry petitioners, which was rejected by the D.C. Circuit on October 29, 1999.⁸⁶¹ The stay of action on the section 126 petitions was subsequently extended to January 10, 2000,⁸⁶² and was extended again until February 17, 2000, when the revised SIP rule became effective.⁸⁶³

On April 11, 2000, EPA asked the court to remove the stay and to extend the SIP submittal deadline to September 1, 2000.⁸⁶⁴ Subsequently, six states indicated they wanted to take their case to the United States Supreme Court.⁸⁶⁵ On August 9, 2000, EPA announced its receipt of a petition for rulemaking by New York and the six New England states pursuant to CAA section 109, to promulgate revised secondary NAAQS for NO_x, SO₂ and PM_{2.5}.⁸⁶⁶ On August 30, 2000, the D.C. Circuit again ruled on the SIP call and further delayed the implementation deadline until May 31, 2004.⁸⁶⁷ Several states, however, indicated their intent to continue to use a May 1, 2003 start date; moreover, the section 126 ruling still con-

859. See Interim Final Stay of Action on Section 126 Petitions for Purpose of Reducing Interstate Ozone Transport, 64 Fed. Reg. 33,956 (June 24, 1999) (codified at 40 C.F.R. pt. 52) (discussing background and reasons for stay).

860. See 175 F.3d 1027 (D.C. Cir. 1999); *rev'd in part sub nom. Whitman v. Am. Trucking Ass'n*, 531 U.S. 457 (2001) (remanding eight-hour ozone standard).

861. See *Appalachian Power Co. v. EPA*, 2001 WL 376499 (D.C. Cir. Mar. 27, 2001) (rejecting industry's motion to stay).

862. See Final Rule To Extend the Stay of Action on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 64 Fed. Reg. 67,781 (Dec. 3, 1999) (codified at 40 C.F.R. pt. 52).

863. See Final Rule To Extend the Stay of Action on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 65 Fed. Reg. 2039 (Jan. 13, 2000) (codified at 40 C.F.R. pt. 52).

864. See Pamela Najor, *Court Should Not Give States Extra Time To Develop NO_x Control Plans*, EPA Says, Daily Env't Rep. (BNA), May 19, 2000, at A-1 (asking for extension of SIP deadline).

865. See Pamela Najor, *Six States Ask Federal Appeals Court To Delay Oct. 30 Deadline for NO_x Plans*, Daily Env't Rep. (BNA), Aug. 9, 2000, at A-1 (describing state response to EPA request for extension of deadline).

866. See Petition for Secondary National Ambient Air Quality Standards for Nitrogen Dioxide, Sulfur Dioxide, and Fine Particulate Matter and Related Request, 65 Fed. Reg. 48,699 (Aug. 9, 2000) (noting that pollutants are associated with formation of acid rain).

867. See *Michigan v. EPA*, No. 98-1497 2000 WL 1341477 (D.C. Cir. Aug. 30, 2000) (stating that extension allows sources in states with NO_x SIP call role will have 1,309 days for implementation as original rule provided).

tained a May 1, 2003 deadline.⁸⁶⁸ Litigation over the section 126 final rules followed, and on November 13, 2000, EPA announced a proposed settlement agreement.⁸⁶⁹

On September 18, 2000, EPA stayed the NO_x SIP call insofar as it related to the eight-hour ozone standard that had been rejected in *American Trucking Ass'n Inc. v. EPA*.⁸⁷⁰ On December 26, 2000, EPA ruled that Virginia, West Virginia, Alabama, Kentucky, North Carolina, South Carolina, Tennessee, Illinois, Indiana, Michigan, Ohio and the District of Columbia had failed to submit SIP measures as required by the SIP call.⁸⁷¹ The rule took effect January 25, 2001, which triggers both the sanction provisions of the CAA and the two year period for EPA to promulgate a federal implementation plan (FIP).⁸⁷²

On May 15, 2001, the D.C. Circuit once again issued an opinion on the section 126 rule in *Appalachian Power Co. v. EPA*.⁸⁷³ Numerous petitioners had challenged the rule as being inconsistent with the CAA, as well as being arbitrary and capricious and technically deficient.⁸⁷⁴ The court upheld most aspects of the rule, but remanded several parts of it to EPA for reconsideration.⁸⁷⁵ The court upheld EPA's interpretation that CAA sections 110 and 126 are independent statutory tools to address interstate pollution transport; therefore, EPA may deploy them either singly or in tandem.⁸⁷⁶ The court also upheld EPA's definition of "significant contribution" under section 126 to be those emissions of NO_x that can

868. See 3 Airtrends 9:3 (Sept. 27, 2000); see also Pamela Najor, *Federal Court Grants More Time to Utilities To Comply With 1998 Ozone Transport Rule*, 31 Env't Rep. (BNA) 1922 (Sept. 15, 2000) (reaffirming May 1, 2003 deadline).

869. See Proposed Settlement Agreements on Regulations Under Section 126 of the Clean Air Act Reducing Regional Transport of Ozone, 65 Fed. Reg. 67,742-01 (Nov. 13, 2000) (announcing EPA's proposed settlement agreement).

870. See Stay of the Eight-Hour Portion of the Findings of Significant Contribution and Rulemaking for Purposes of Reducing Interstate Ozone Transport, 65 Fed. Reg. 56,245 (Sept. 18, 2000) (codified at 40 C.F.R. pt. 51) (discussing reasons for stay).

871. See Final Rule Making Findings of Failure to Submit Required State Implementation Plans for NO_x SIP Call, 65 Fed. Reg. 81,366 (Dec. 26, 2000) (codified at 40 C.F.R. pt. 51) (recognizing that SIP measures were to provide for reductions in emissions of NO_x).

872. See *id.* (pointing out that EPA is trying to reduce NO_x emissions in eastern States because of public health).

873. See generally 249 F.3d 1032 (D.C. Cir. 2001) (setting out reasoning for opinion).

874. See *id.* at 1036 (noting that rule requires NO_x-emitting facilities to conform to EPA's emission limits and participate in emissions trading program).

875. See *id.* at 1067-68 (issuing conditions of remand).

876. See *id.* at 1046 (holding that deployment can be done independently or in tandem).

be controlled at a cost of no more than \$2,000 per ton of NO_x removed.⁸⁷⁷

The court remanded EPA's use of the Integrated Planning Model (IPM) for explanation, based on certain specific challenges, saying it would reverse only if the Agency's conclusions were unreasonable.⁸⁷⁸ The court upheld the section 126 rule establishing a NO_x budget for each upwind state the caps emissions from existing proposed and future as-yet-unproposed sources. EPA may bar the construction or operation of major new proposed sources.⁸⁷⁹ The court vacated and remanded the portion of the rule concerning cogenerators because it could not determine why EPA was treating them differently than large electric generating units.⁸⁸⁰

On June 8, 2001, the D. C. Circuit revisited the NO_x SIP Call in the *Appalachian Power II* case that raised some of the issues that were before the court in the May 21, 2001, *Appalachian Power Company* case, previously discussed, dealing with the section 126 rule.⁸⁸¹ On March 3, 2000, the court had upheld the bulk of EPA's NO_x SIP Call in *Michigan v. EPA*.⁸⁸² The *Appalachian Power II* case involved various challenges to how EPA made its decision in the SIP Call.⁸⁸³ The primary issue before the court involved how EPA had devised the state NO_x budgets. The court held that it could not "excuse the EPA's reliance upon a methodology that generates apparently arbitrary results particularly where, as here, the agency has failed to justify its choice."⁸⁸⁴ The court also remanded EPA's growth factor determinations, source definitions challenged by non-electric generators, and the state emissions budget for Missouri. It rejected the other issues raised by the petitioners.⁸⁸⁵

EPA's SIP Call requires stationary sources to meet the state emissions budget by May 31, 2004.⁸⁸⁶ Emissions from the twenty-

877. See *id.* at 1049 (upholding EPA's definition of "significant contribution").

878. See *Appalachian Power Co.*, 249 F.3d at 1055 (noting EPA needs to engage in reasoned determination on how to set EGU growth factors).

879. See *id.* at 1057; see also Revisions of the Federal NO_x Budget Trading Program, the Emissions Monitoring Provisions, the Permits Regulation Provisions and the Appeals Procedures, 66 Fed. Reg. 31,977 (proposed June 13, 2001).

880. See *Appalachian Power Co.*, 249 F.3d at 1063 (pointing out that EPA failed to explain its classification or to respond to comments).

881. See *id.* at 1032 (discussing § 126 rule).

882. See generally 213 F.3d 663 (D.C. Cir. 2000) (explaining court's reasoning).

883. See Natl. Mining Ass'n. v. U.S. Dept. of Interior, 251 F.3d 1007 (D.C. Cir. 2001) (showing issues of case).

884. See *id.* (holding arbitrary results cannot justify EPA final decision).

885. See *id.*

886. See Proposed Rule To Implement the 8-Hour Ozone National Ambient Air Quality Standard, 68 Fed. Reg. 32,801, 32,807 (June 2, 2003) (codified at 40

two states and the District of Columbia must meet the state caps by 2007.⁸⁸⁷ In addition to the SIP Call and the section 126 rule, EPA aims to reduce interstate air pollution through its Tier 2 motor vehicle standards and the associated gasoline sulfur limits,⁸⁸⁸ and the heavy duty diesel rule.⁸⁸⁹ Also, pursuant to section 183(e), EPA has promulgated control techniques guidelines⁸⁹⁰ and expects to issue additional rules.⁸⁹¹ Finally, the MACT standards for hazardous air pollutants (HAPs) promulgated pursuant to section 112⁸⁹² also will reduce interstate transport of VOCs because most organic HAPs are VOCs. EPA expects that by 2005, the MACT standards will reduce toxic air emissions by 1.5 million TPY.⁸⁹³

On April 4, 2003, EPA proposed to revise the section 126 provision to deal with the May 31, 2004 compliance date. EPA is proposing to withdraw the section 126 rule if the state adopts, and EPA approves, a SIP with a May 31, 2004 compliance date that meets either the full NO_x SIP Call or Phase 1 where the state is regulating the section 126 sources to the same stringency as the section 126 rule.⁸⁹⁴ Phase 1 is the portion of the SIP Call rule upheld by the D.C. Circuit and accounts for approximately ninety percent of the total emissions reductions called for by the original NO_x SIP Call.

C.F.R. pt. 52) [Hereinafter Proposed 8-hour NAAQS] (explaining SIP Call mandated reductions be made by May 2003, but D.C. Circuit stay of rule during litigation resulted in one-year delay to May 2004.)

887. *See id.* (explaining state emissions requirement deadlines).

888. *See generally* Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, 65 Fed. Reg. 6698 (Feb. 10, 2000) (codified at 40 C.F.R. pts. 80, 85, 86) (enacting final rule for motor vehicle emissions standards and gasoline sulfur control requirement).

889. *See* Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements, 66 Fed. Reg. 5002 (Jan. 18, 2001) (codified at 40 C.F.R. pts. 69, 80, 86) (enacting final rule for heavy duty engines and vehicle standards and highway diesel fuel sulfur control requirements).

890. *See* 42 U.S.C. § 7511(b) (2000) (stating rules for guidelines).

891. *See* Proposed 8-hour NAAQS, 68 Fed. Reg. at 32,806 (explaining additional rules are expected).

892. *See* 42 U.S.C. § 7412 (2000) (defining hazardous air pollutants).

893. *See generally*, Arnold W. Reitze, Jr. & Randy Lowell, *Control of Hazardous Air Pollution*, 28 B.C. ENVTL. AFF. L. REV. 229 (2001) (analyzing EPA's requirements and programs to control HAPs).

894. *See* Endangered and Threatened Wildlife and Plants; Establishment of Three Additional Manatee Protection Areas in Florida, 68 Fed. Reg. 16,643 (proposed Apr. 4, 2003) (codified at 50 C.F.R. pt. 17) (showing EPA's willingness to approve SIPs).

Phase 2 deals with the remaining issues and will be subject to additional rulemaking.⁸⁹⁵

§ 6. FEDERAL SANCTIONS TO ENFORCE SIP REQUIREMENTS

§ 6(a). Background

The 1970 CAA Amendments gave EPA Administrator the authority to require states to promulgate, implement and enforce regulations pertaining to SIPs that could include transportation controls and automobile inspections. EPA may promulgate a FIP when state action is unsatisfactory, but constitutional questions arise if states are forced to implement the FIP. These include determining what state activities related to air pollution are within Congress' reach under the Commerce Clause and whether such an exercise of federal power would constitute an unconstitutional invasion of state sovereignty protected by the Tenth Amendment.

United States Supreme Court decisions such as *Gibbons v. Ogden*,⁸⁹⁶ *Wickard v. Filburn*,⁸⁹⁷ and *Perez v. United States*⁸⁹⁸ affirm that Congress has the power under the Commerce Clause to regulate "local" activities when such activities indirectly, but substantially affect interstate commerce. Other cases, however, emphasize an equally venerable principle: the federal government does not have the power to compel the states to exercise their police powers. In *Gibbons*, Chief Justice Marshall enunciated this principle when he supported far-reaching federal powers under the Commerce Clause.⁸⁹⁹

In 1976, the Supreme Court balanced these competing values in *National League of Cities v. Usery*,⁹⁰⁰ a case involving the 1974 Fair Labor Standards Act Amendments. The Court found that although the state activities in that case appeared to be subject to federal regulation under the Commerce Clause, the regulations in question interfered with the states' freedom to structure operations in areas of traditional governmental functions and, therefore, were an

895. See Interstate Ozone Transport: Response to Court Decisions on the NOx SIP Call, NOx SIP Call Technical Amendments and Section 126 Rules, 67 Fed. Reg. 8396 (February 22, 2002) (codified at 40 C.F.R. pts. 51, 52, 96, 97) (promulgating proposed rule).

896. 22 U.S. 1 (1824) (affirming federal power to regulate channels of commerce).

897. 317 U.S. 111 (1942) (explaining aggregation principle).

898. 402 U.S. 146 (1971) (affirming federal power over non-local activities).

899. See *Gibbons*, 22 U.S. at 37 (discussing State and Federal governments' concurrent powers).

900. 426 U.S. 833 (1976) (evaluating federal power under commerce clause).

impermissible control. These conflicting principles of federalism created difficulty in implementing CAA for more than two decades.

In the early 1970s, the Administrator granted the states extra time to submit transportation control plans. This delay was challenged and held invalid in *Natural Resources Defense Council, Inc. v. EPA*.⁹⁰¹ The Administrator then required twenty-two states to amend their plans to comply with the court order. California did not submit a transportation control plan in the time prescribed. The plans of Arizona, Maryland, Virginia and District of Columbia were partially disapproved. The Administrator promulgated substitute measures for those jurisdictions. Although the provisions varied somewhat from state to state, the regulations required the states to establish vehicle inspection and maintenance (I/M) programs. Many states resisted EPA's efforts to force them to enact measures to control motor vehicle emissions.⁹⁰² States challenged EPA's efforts and raised legal issues that ran the full gamut of statutory, constitutional and procedural issues. Federal courts addressed the issue of what kind of transportation controls, if any, EPA could require states to enforce. The collective wisdom of the courts provided a confusing answer.

In June 1974 in *Pennsylvania v. EPA*,⁹⁰³ the state challenged an EPA mandated pollution control device program and enforcement of the Pennsylvania transportation control plan that required vehicle miles traveled (VMT) controls, as well as motor vehicle emissions controls. The court concluded that the Congress had considered the possibility that EPA might have to require a state to enforce its transportation control plan and had assumed that the states could be required to enforce such plans. Furthermore, the court found that such a requirement did not conflict with the proper functioning of the system of federalism.

Three months later, in *South Terminal Corporation v. EPA*,⁹⁰⁴ (involving private plaintiffs challenging the Boston transportation controls plan, not direct state enforcement), the court stated: "We are inclined to construe Congress' broad grant of power to EPA as including all enforcement devices reasonably necessary to the

901. 475 F.2d 968, 970 (D.C. Cir. 1973) (noting that Act plainly does not permit extensions of statutory time).

902. See 38 Fed. Reg. 30,626 (1973) (codified at 40 C.F.R. part 52) (containing history of EPA's promulgation of transportation controls, which began in 1974, in preamble).

903. 500 F.2d 246 (3d Cir. 1974) (challenging EPA pollution control device program).

904. 504 F.2d 646 (1st Cir. 1974) (interpreting Boston control plans).

achievement and maintenance of the goals established by the legislation.”⁹⁰⁵ Thus, the two courts apparently were in basic agreement.

Almost a year passed before new cases addressed these issues. In *Brown v. EPA*,⁹⁰⁶ an extensive EPA transportation control plan for California was attacked by at least 208 public and private parties. The court found that “[t]his plan specifically directed the State of California to undertake those tasks assigned to it;”⁹⁰⁷ but, the court held that the CAA did not authorize legal measures against the State of California if the state failed to comply. To avoid constitutional questions, the court construed the CAA as *not* authorizing EPA’s Administrator to require state enforcement. Essentially, it held that CAA section 113, which deals with federal enforcement powers against “any person,” does not apply to actions against a state because a state is not “any person.” A similar opinion was rendered in *Arizona v. EPA*.⁹⁰⁸

In *Maryland v. EPA*,⁹⁰⁹ the court also dealt with various transportation control strategies, as well as an EPA directive that the State of Maryland submit the texts of statutes, regulations and funding legislation it would propose for adoption. The court held that the power to “revise, negate, or annul” a law of a state legislature was denied to Congress, as well as to the executive branch, and that EPA could not force the state to administer the federal program.

With two U.S. appellate court cases supporting EPA’s claimed enforcement authority and three cases denying that authority, the U.S. Court of Appeals for the D.C. Circuit decided *District of Columbia v. Train*.⁹¹⁰ The case, involving the District of Columbia, Virginia and Maryland, took the middle ground between the previously decided cases. The court held indirect sources of air pollution can be regulated under Article I, Section VIII of the U.S. Constitution. Thus, EPA can require exclusive bus/carpool lanes, the purchase of additional buses, and nonregistration of vehicles

905. *See id.* at 669 (holding that EPA has authority to regulate parking facilities to this end).

906. 521 F.2d 827 (9th Cir. 1975), *vacated*; 431 U.S. 99 (1977) (*per curiam*) (attacking California transportation control plan).

907. *See id.* at 830 (noting additional requirements of plan).

908. 521 F.2d 825, 826 (9th Cir. 1975) (holding that CAA does not authorize imposition of sanctions against Arizona).

909. 530 F.2d 215 (4th Cir. 1975) (evaluating transportation control strategies).

910. 521 F.2d 971 (D.C. Cir. 1975) (dealing with transportation plans in D.C. Circuit).

that do not meet retrofit or maintenance standards.⁹¹¹ The federal government cannot, however, require administration of a specified inspection, maintenance and equipment retrofit program promulgated by the Administrator because this is an invasion of states' rights.⁹¹² The federal government then petitioned for, and was granted, a *writ of certiorari*.

The Supreme Court had to decide the transportation controls issue based on *National League of Cities* because that decision was not yet overruled by *Garcia v. San Antonio Metropolitan Transit Authority*.⁹¹³ Prior to arguments in *Brown v. Train*,⁹¹⁴ the government informed the Court that the bus purchase regulations were to be repealed, and the requirement that the states submit legally adopted regulations was dropped. The Supreme Court then vacated the cases for mootness. The *Brown* case went back to the U.S. Court of Appeals for the Ninth Circuit, which held that a state that builds and manages roads does not become a source of automobile emissions nor a polluter under the CAA.⁹¹⁵

In the same year, the Supreme Court denied *certiorari* in another transportation control case, *Beame v. Friends of the Earth*.⁹¹⁶ In this case, FOE sought to compel New York City to carry out transportation measures under its SIP. The U.S. Court of Appeals had ruled the city could not use constitutional defenses in a civil action brought to enforce the SIP when the city supported the SIP at the time EPA approved it. Thus, in 1977, the law concerning the constitutional reach of EPA's power to compel state action was difficult to ascertain.

In 1977, after the CAA Amendments were enacted, the U.S. Court of Appeals for the D.C. Circuit remanded to EPA what was left of the District of Columbia's challenge to the transportation controls.⁹¹⁷ These constitutional issues continued to interest schol-

911. See *id.* at 989-90 (noting that regulation of indirect sources does not regulate States directly but regulates factors which influence use of pollution sources by other parties).

912. See *id.* at 992 (recognizing that Administrator seeks, under guise of Commerce power, to pass compelled State regulation).

913. 469 U.S. 528 (1985) (deciding transportation control issue).

914. 431 U.S. 99 (1977) (repealing bus purchase regulations and requirements that states submit regulations).

915. See *Brown v. EPA*, 566 F.2d 665, 670 (9th Cir. 1977) (noting conclusion came from *Brown I* decision).

916. See *Friends of the Earth v. Carey*, 552 F.2d 25 (2d Cir. 1977), *cert. denied*, 434 U.S. 902 (1977) (denying Supreme Court review).

917. See *District of Columbia v. Costle*, 567 F.2d 1091, 1094 (D.C. Cir. 1977) (setting out terms of remand).

ars and others until the end of 1977.⁹¹⁸ However, such issues became less important as EPA used new provisions in the 1977 CAA to impose economic sanctions, including the threat to withhold federal money from states that failed to comply, thereby avoiding troublesome constitutional issues.⁹¹⁹ Constitutional legal issues concerning the use of FIPs occasionally still arise, but most problems are avoided because EPA merely takes away federal money⁹²⁰ or imposes construction restrictions to obtain compliance.⁹²¹ In 1978, D.C. Circuit upheld the requirement that urban mass transit or highway projects obtain approval by a metropolitan planning organization as being consistent with a long-range transportation plan as a condition for federal funding.⁹²²

In 1980, the U.S. Court of Appeals for the Sixth Circuit decided *United States v. Ohio Dept. of Highway Safety*.⁹²³ The issue was whether Ohio was subject to the CAA's enforcement provisions and could, therefore, be compelled to deny motor vehicle registration to vehicles that had not passed an inspection and maintenance (I/M) test required by an EPA-promulgated provision of the SIP. Was EPA allowed to proceed directly against a state to require enforcement of EPA-promulgated provision? The court held that the federal interest in controlling air pollution outweighs the state interest and is a lawful exercise of the power to regulate interstate commerce. There was no interference with a state governmental function that violated the Tenth Amendment. The state was required to withhold registration from vehicles that do not meet CAA requirements.

§ 6(b). Sanctions Under The 1990 CAA Amendments

The 1990 CAA Amendments revised the law concerning sanctions and set forth criteria in section 179(a) to determine when EPA may apply the two types of sanctions found in section 179(b).

918. See generally Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L. J. 1196 (1977).

919. See Jackson Battle, *Transportation Controls Under The Clean Air Act—An Experience in (Un)Cooperative Federalism*, 15 LAND & WATER L. REV. 1 (1980) (chronicling development of post-1977 program).

920. See Clean Air Act § 176, 42 U.S.C. § 7506 (2000) (conditioning highway construction grants and air planning grants); see also *id.* at § 316 (conditioning sewage treatment grants).

921. See *id.* at § 173(a)(4); see also *id.* at 110(a)(2)(I) (banning construction).

922. See *Los Angeles v. Adams*, 574 F.2d 607, 608-09 (D.C. Cir. 1978) (noting that metropolitan planning organization would be comprised of representatives of local government).

923. See 635 F.2d 1195 (6th Cir. 1980) (explaining significance of I/M test).

They are highway funding restrictions and increased emissions offset ratios for new and modified sources. The construction ban provisions of section 110(a)(2)(I) were largely repealed. However, other provisions of the CAA provide construction bans and other sanctions to prevent increases in air pollution due to SIP planning failures or implementation failures.⁹²⁴

EPA may refuse to allow the issuance of construction permits for major stationary sources if the approved SIP for meeting nonattainment requirements is not being adequately implemented for the nonattainment area in which new or modified sources are located.⁹²⁵ CAA section 113(a)(5) provides a second sanction that EPA may use to prohibit constructing or modifying specific major stationary sources, and to take other enforcement actions against individual sources if the Administrator finds that a state is not complying with any CAA requirement or prohibition concerning construction of new sources or modifying existing sources.⁹²⁶ A third sanction under section 179(a)(4) allows the Administrator to withhold all or part of the grants that support air pollution planning and control programs that may be awarded under CAA section 105.⁹²⁷ A fourth sanction, found in CAA section 316, allows the Administrator to withhold, condition or restrict sewage treatment grants to control growth associated with new sewage treatment capacity that creates increases in emissions not part of the SIP planning process.⁹²⁸ The conformity provisions of CAA section 176(c) provides a fifth sanction that prohibit federal funding, licensing or permitting if the activity does not conform to the SIP.⁹²⁹

Sections 110(m) and 179(a) are the major sanction provisions. Pursuant to section 110(m),⁹³⁰ the Administrator may impose sanctions in any portion of the state she determines is reasonable and

924. See generally *State Implementation Plans: General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990*, 57 Fed. Reg. 13,498 (April 16, 1992) (codified at 40 C.F.R. pt. 52) (explaining CAA construction bans and sanctions).

925. See Clean Air Act § 173(a)(4), 42 U.S.C. § 7503(a)(4) (2000) (designating permit requirements).

926. See *id.* at § 7413(a)(5) (setting out federal enforcement of air quality and emissions).

927. See *id.* § 7509(a) (creating sanctions and consequences of failure to attain).

928. See *id.* at § 7616 (noting general provisions for sewage treatment grants).

929. See *id.* at § 7506(c) (limiting federal assistance in certain circumstances); see also *supra* § 4.

930. See 42 U.S.C. § 7410(m) (2000) (setting out state implementation plans for air quality standards).

appropriate. Section 179(a)⁹³¹ requires the Administrator to impose sanctions eighteen months after finding a state failed to submit a SIP, or following the disapproval of a required submission if the deficiency is not corrected. Section 110(m) does not provide a specific time frame for applying sanctions, but allows EPA to apply sanctions "at any time" after it makes a finding. EPA, however, will impose sanctions earlier than eighteen months in limited circumstances, such as where a state explicitly resists working to resolve a plan's deficiency.⁹³² This will only be done after notice and comment rulemaking. The sanctions that may be applied under sections 110(m) or 179(a) are listed in section 179(b).

Section 179(b) establishes two types of sanctions that the Administrator may impose pursuant to section 110(m), a highway funding sanction and a two-to-one offset sanction. Under the highway funding sanction provision, the Administrator may prohibit the approval of certain projects by the Secretary of Transportation or the awarding of certain grants under Title 23 of the United States Code. Under the emissions offset sanction provision, a ratio of at least two-to-one will be required for emissions reductions from existing sources within the nonattainment area to offset emissions from major new or modified facilities.

Under section 110(m), section 179(b) sanctions may be applied when the Administrator makes a finding under section 179(a)(1) through (4) and the Agency has followed all procedural requirements (i.e., rulemaking requirements, such as notice and comment) for imposing a sanction. The Administrator has no authority under section 110(m), nor any mandatory duty under section 179(a), to impose sanctions until a finding has been made.

Section 179(a) sets forth the four types of findings that may lead to imposing a sanction:

- (1) that a state has failed to submit a SIP or an element of a SIP for a nonattainment area, or the SIP or SIP element fails to meet the completeness criteria issued pursuant to section 110(k);
- (2) that a SIP submission is disapproved for a nonattainment area based on its failure to meet one or more plan elements required by the CAA;

931. See *id.* at § 7509(a) (noting sanctions).

932. See Criteria for Exercising Discretionary Sanctions Under Title I of the Clean Air Act, 59 Fed. Reg. 1476 (Jan. 11, 1994) (codified at 40 C.F.R. pt. 52) (promulgating final rule for discretionary sanctions).

- (3) that the state has not made any other submission, or has not made a complete submission, as required by the amended CAA, or that such a submission is disapproved; or
- (4) that a requirement of an approved plan is not being implemented.

When a finding under section 179(a) has been made,⁹³³ the Administrator may, pursuant to section 110(m), apply section 179(b) highway sanctions and offset sanctions to any area of the state that is determined to be reasonable and appropriate.

On September 24, 1993, EPA announced that it would standardize the sequence of penalties that states would be subject to if they failed to submit an adequate SIP.⁹³⁴ In its announcement, EPA acknowledged that it retained the discretion to administer penalties provided by the CAA in any order it chose. Under this proposed rule, states would have eighteen months to correct a defective SIP. After that, new sources locating in the state would have to find offsets from other sources equal to twice the emissions they would be releasing. If the SIP was not corrected within six months after the implementation of the two-to-one offsets sanction, federal highway funds would be withheld from the state. Under this proposed rule, the clock for sanctions begins to run after EPA has determined that it will not approve the SIP, the state has failed to submit a SIP, or the state does not implement required air pollution control measures. This rule was finalized on August 4, 1994.⁹³⁵

After highway sanctions are imposed certain projects and grants can still go forward. Safety projects that reduce accidents are exempt from sanctions.⁹³⁶ In addition, the statute exempts seven activities from highway sanctions,⁹³⁷ and includes an eighth general exclusion for programs that improve air quality and do not en-

933. See Clean Air Act § 502(d)-(i), 42 U.S.C. § 7661(d), (i) (2000) (including specific sanctions concerning permit requirements). The finding regarding the permit program is not a finding under section 179(a); thus section 110(m) does not apply to the use of sanctions for addressing permit-related failures. *Id.*

934. See *Air Pollution: Penalties for Inadequate SIP Submissions Would Follow Sequence Under EPA Proposal*, 24 Env't Rep. (BNA) 1004 (Oct. 1, 1993) (standardizing penalties imposed on states).

935. See *Selection of Sequence of Mandatory Sanctions For Findings Made Pursuant to Section 179 of the Clean Air Act*, 59 Fed. Reg. 39,832 (Aug. 4, 1994) (codified at 40 C.F.R. pt. 52.23) (instituting final rule).

936. See Clean Air Act § 179(b)(1)(A), 42 U.S.C. § 7509(b)(1)(A) (2000) (setting out highway sanctions).

937. See *id.* at § 179(b)(1)(B) (describing projects and grants protected from sanctions).

courage single occupancy vehicle (SOV) capacity.⁹³⁸ EPA, on April 1, 1996, published a final policy concerning highway sanctions imposed under CAA sections 179 or 110(m).⁹³⁹ This policy describes and clarifies the types of highway projects that are exempt from highway sanctions. The policy identifies both transportation projects that are categorically excluded, and other projects that may be exempted if EPA's Administrator, in consultation with the Secretary of Transportation, finds they will improve air quality and not encourage SOV capacity.

In *Virginia v. United States*, Virginia challenged the constitutionality of the CAA sanctions in a federal district court action.⁹⁴⁰ The court held that jurisdiction in this matter was with the United States Court of Appeals based on CAA section 307(b)(1).⁹⁴¹ The Fourth Circuit subsequently rejected Virginia's position and held that the CAA does not improperly coerce a state if it induces compliance.⁹⁴² Virginia faced sanctions because it refused to allow persons who participated in the operating permit program at the administrative level to seek judicial review unless they had an economic interest. The effect of Virginia's position was that only polluters could obtain judicial review. On January 21, 1997, the Supreme Court refused to review the constitutionality of the CAA sanctions.⁹⁴³

In the Fourth Circuit, Virginia claimed that Title V and its sanctions provisions were unconstitutional because they impinge upon a fundamental element of state sovereignty, the state's right to articulate its own rules of judicial standing. The court held there was no constitutional violation because federal law "may, indeed, be designed to induce state action in areas that otherwise would be

938. See *id.* at § 179(b)(1)(B)(viii) (listing programs).

939. See generally Exemption Criteria Policy for Highway Sanctions, 61 Fed. Reg. 14,363 (Apr. 1, 1996) (outlining criteria determining which grants awarded despite EPA sanctions).

940. See generally 926 F. Supp. 537 (E.D. Va. 1995) (considering constitutionality of sanctions under Clean Air Act).

941. 42 U.S.C. § 7607(b)(1) (2000) (noting court with jurisdiction for types of petitions for review).

942. See generally *Virginia v. Browner*, 80 F.3d 869 (4th Cir. 1996) (reviewing VAS challenge to rejection of its air quality program); see also *Virginia v. United States* (Virginia I) 74 F.3d 517 (4th Cir. 1996) (discussing timing of sanctions in greater detail). Sanctions are mandatory, but they may be imposed earlier than mandated by the statute if EPA finds, after holding a notice and comment rulemaking proceeding, that early imposition of sanctions is necessary to encourage compliance. See generally Clean Air Act § 502(d)-(i), 42 U.S.C. § 7661a(d)-(i) (2000) (indicating process requirements for permits).

943. See *Virginia v. Browner*, 519 U.S. 1090 (1997) (denying review); see also *Virginia Denied Supreme Court Review of Operating Permit Program Sanctions*, Daily Env't Rep. (BNA), Jan. 22, 1997, at A-2 (noting Supreme Court's denial).

beyond Congress' regulatory authority."⁹⁴⁴ If Virginia chooses to change its rules of judicial standing, it will make the change only because the CAA's sanctions provisions induce it to do so, not because they coerce it.

Two constitutional provisions' sources allow using the highway sanction. Elimination of air pollution promotes the general welfare; therefore, Congress may tie the award of federal funds to the states' efforts to eliminate air pollution.⁹⁴⁵ The Commerce Clause⁹⁴⁶ provides Congress with the power to regulate air pollution or other environmental hazards that may affect more than one state.⁹⁴⁷

The Fourth Circuit also held that the highway sanction is a valid exercise of the Spending Power⁹⁴⁸ and as a valid exercise of that power, it comports with the requirements of the Tenth Amendment. Congress may use the power of the purse to encourage states to enact particular legislation, although this power is not limitless. "[I]n some circumstances the financial inducement offered by Congress might be so coercive as to pass the point at which 'pressure turns into compulsion.'"⁹⁴⁹ Moreover, federal funds may be subject to conditions "only in ways reasonably related to the purpose for which the funds are expended."⁹⁵⁰ No court, however, has ever struck down a federal statute on grounds that it exceeded the Spending Power.⁹⁵¹

The offset sanction,⁹⁵² which limits new construction or modification of major stationary sources of air pollution, is constitutional because it regulates private pollution sources, not states. It does not burden Virginia as a governmental unit. Thus, sanctions do not

944. See *FERC v. Mississippi*, 456 U.S. 742, 766 (1982) (noting federal power with responsibility to states).

945. See U.S. CONST. art. I, § 8, cl. 1 (authorizing Congress to "provide for the . . . general welfare of the United States").

946. U.S. CONST. art. I, § 8, cl. 3.

947. See *Hodel v. Virginia Surface Mining & Reclamation Ass'n*, 452 U.S. 264, 277-83 (1981) (accepting congressional findings that surface coal mining affect interstate commerce).

948. See Clean Air Act § 179(b)(1), 42 U.S.C. § 7509(b)(1) (2000) (noting highway sanctions).

949. *South Dakota v. Dole*, 483 U.S. 203, 211 (1987) (quoting *Steward Machine Co. v. Davis*, 301 US 548, 590 (1937)) (discussing limits of federal spending power).

950. *Id.* at 213 (discussing and citing *Massachusetts v. United States*, 435 U.S. 444, 461 (1978)).

951. See *Nevada v. Skinner*, 884 F.2d 445, 448 (9th Cir. 1989) (noting conditional grants under coercion theory have never been struck down).

952. See generally Clean Air Act § 179(b)(2), 42 U.S.C. § 7509(b)(2) (2000) (discussing offsets).

violate the principles of federalism embodied in the Tenth Amendment and are constitutional.⁹⁵³ Also, The FIP implementation sanction⁹⁵⁴ was held to be constitutional. The essence of a Tenth Amendment violation is that the state is commanded to regulate, but Virginia was not commanded to regulate. The Commonwealth could choose to do nothing and let the federal government promulgate and enforce its own permit program within Virginia. Because "the full regulatory burden will be borne by the Federal Government," the sanction is constitutional.⁹⁵⁵

In *Missouri v. United States*, a federal district court upheld the mandatory offset sanction and the highway funds sanction under the CAA.⁹⁵⁶ The state claimed the sanctions violated the Tenth Amendment and the highway sanction violated the Spending Clause because it placed a condition on federal highway spending that was not rationally related to the purpose of highway spending and was unduly coercive.⁹⁵⁷ The court held that the sanctions Missouri faced were constitutional. The petition for review was denied.

New York v. United States,⁹⁵⁸ laid out the framework for examining Tenth Amendment claims. Coercion is not determined by assessing the economic impact of a statute. Rather, a Tenth Amendment violation occurs when a state is made to choose between two "unconstitutionally coercive regulatory techniques," not between compliance or the threat of a valid exercise of Congress' other powers.

Under section 113(a)(5) of the CAA, EPA may take action directly against sources, not states.⁹⁵⁹ Therefore, by offering states an alternative of submitting and implementing SIPs or having air pollution sources in nonattainment areas subject to a 2:1 offset ratio, rather than a lower ratio, states retain a choice. Accordingly, Congress is "threatening" to exercise its Commerce Clause power when

953. See *Virginia v. United States*, 926 F. Supp. 537, 545 (E.D. Va. 1995) (discussing whether case is ripe for review).

954. See Clean Air Act § 502(d)(3), 42 U.S.C. § 7661a(d)(3) (2000) (requiring FIP if state plan is not approved within two years of submission).

955. See *Hodel v. Virginia Surface Mining & Reclamation Ass'n.*, 452 U.S. 264, 288 (1981) (holding that act does not "commandeer" State legislative function if full regulatory burden is borne by federal government).

956. See generally *Missouri v. United States*, 918 F. Supp. 1320 (E.D. Mo. 1996) (challenging federal sanctions under CAA).

957. See U.S. CONST. art I, § 8, cl. 1.

958. See *New York v. United States*, 505 U.S. 144 (1992) (considering Congress' power to compel states to act under Tenth Amendment).

959. See 42 U.S.C. § 7413(a)(5) (2000) (outlining EPA's course of action when State is not acting in compliance).

it uses the offset sanction to induce compliance with the provisions of the CAA. This is permissible under the Tenth Amendment.

Under the Spending Clause, Congress may attach conditions to the receipt of federal funds. The U.S. Supreme Court uses a four-part test to determine whether an act of Congress exceeds the limits of the Spending Clause. An expenditure will be upheld if (1) it is for the general welfare, (2) the "conditions imposed are unambiguous," (3) "the conditions imposed are reasonably related to the purpose of the expenditure," and (4) the condition does not violate any independent constitutional guaranty.⁹⁶⁰

Therefore, the court examined whether there was "some relationship" between federal highway spending and the CAA Amendment's highway funds sanction. The court needed only to find evidence of "some relationship" between the condition and the expenditure. The United States Supreme Court has approved imposing conditions not directly related to the purpose of the federal funding. Congress reasonably decided to condition federal highway funding on state submission and implementation of acceptable SIP revisions, which are intended to control air pollution, including air pollution caused by motor vehicles.

The court did not indicate any belief that the federal benefit must have been granted under the same statute out of which the condition arose. The court indicated that a valid exercise of the Spending Clause power occurs when Congress "condition[s] the receipt of federal funds in a way reasonably calculated to address [the] particular impediment to a purpose for which the funds are expended."⁹⁶¹ For these reasons, the court held that the highway funds sanction did not violate the Spending Clause. In the CAA, "Congress has held out the threat of exercising two of its enumerated powers - the commerce power, in the form of the offset sanction and FIP - and the spending power, in the form of the highway funds sanction. This kind of encouragement is exactly what the New York Court condoned."⁹⁶²

A state can choose to enact legislation according to the directives of Congress or it can do nothing and wait for the federal government to preempt this area and take over with a FIP, an exercise of its commerce power. For the purposes of the Tenth Amendment

960. See *South Dakota v. Dole*, 483 U.S. 203, 207-08 (1987) (discussing limits of federal spending power and describing four part test).

961. *Id.* at 209 (holding that conditional grant passed three of four part test).

962. See *Missouri*, 918 F. Supp. at 1336 (discussing that Congress' action under CAA acceptable).

inquiry, however, the State is free to choose. Therefore, the offset and highway funds sanctions provisions of the CAA do not violate the Tenth Amendment.

§ 6(c). Criteria For Exercising Sanctions Statewide

Once a finding under section 179(a) has been made, the Administrator may, pursuant to section 110(m), apply the sanctions to any portion of the State. Using section 110(m) allows sanctions to be applied to a larger area than sanctions imposed pursuant to section 179(a). Although section 110(m) indicates that sanctions may be applied to any area of the State, section 179(b)(1) contains a specific geographic limitation: "[t]he Administrator may impose a prohibition, applicable to a nonattainment area" on the approval by the Secretary of Transportation of certain projects or the awarding of certain grants under Title 23 of the U.S. Code.⁹⁶³

The second sentence of section 110(m) requires EPA to establish criteria that EPA must apply if it considers applying sanctions under section 110(m) on a statewide basis within twenty-four months of a section 179(a) finding. These criteria will be used by EPA to determine when a political subdivision, rather than the entire state, is principally responsible for a section 179(a) deficiency.

On January 11, 1994, EPA published "Criteria for Exercising Discretionary Sanctions Under Title I of the Clean Air Act."⁹⁶⁴ It sets forth criteria that EPA Administrator must consider when exercising her discretionary authority to apply sanctions on a statewide basis pursuant to CAA section 110(m).⁹⁶⁵ EPA uses five criteria to determine when a state has relinquished its primary control over an activity to a political subdivision, and the political subdivision has

963. See Clean Air Act §§ 110(m), 179(b), 42 U.S.C. 7410 § (2000). Although section 110(m) refers to the sanctions in section 179(b), there is no language stating that the same geographical limitations must apply. See *id.* Section 110(m) refers only to the sanctions themselves, not the accompanying limitations. *Id.* The language of section 110(m) sets forth its own, broader limitations by expressly providing that sanctions may be imposed on an entire State or any portion of a State. *Id.* Section 110(m) states, "The Administrator may apply any of the sanctions listed in section 179(b) . . . with respect to any portion of the State the Administrator determines reasonable and appropriate" *Id.* Therefore, although the Administrator may impose section 110(m) sanctions on any area of the State, the offset sanction may only affect nonattainment areas or attainment areas that are otherwise subject to section 173. See Clean Air Act §§ 110(m), 179(b), 42 U.S.C. § (2000). The highway sanction is not limited in such a manner and could be effective in all areas of a State. See *id.*

964. See generally Criteria for Exercising Discretionary Sanctions Under Title I of the Clean Air Act, 59 Fed. Reg. 1476 (Jan. 11, 1994) (codified at 40 C.F.R. pt. 52) (discussing criteria for exercising discretionary authority).

965. See *id.* (noting purpose of rule).

failed to perform that required activity.⁹⁶⁶ EPA concludes that this delegation is established when a political subdivision:

- (1) has the legal authority to perform the required activity;
- (2) has traditionally performed, or has been delegated the responsibility to perform, the required activity;
- (3) has received, where appropriate, adequate funding or authority to obtain funding from the State to perform the required activity;
- (4) has agreed to perform (and has not revoked that agreement) or is required to accept responsibility for performing the required activity; and
- (5) has failed to perform the required activity.

If one or more political subdivisions each meet all five of the criteria, EPA will consider those subdivisions principally responsible. Therefore, EPA may impose sanctions only on those political subdivisions and on other areas (short of the entire State) for which the Agency determines it is reasonable and appropriate.⁹⁶⁷ However, if all of the criteria have not been met by at least one political subdivision, EPA will use its discretion to determine whether to apply sanctions on a statewide basis.

EPA may apply sanctions pursuant to section 110(m) without examining the criteria if the Agency imposes a sanction on a less-than-statewide basis or EPA imposes statewide sanctions more than twenty-four months after a finding. Furthermore, there are no statutory limitations where a group of political subdivisions, whose combined area comprises the entire state, each suffers a deficiency.

§ 7. THE FAILURE OF THE SIP APPROACH

The Air Quality Act of 1967⁹⁶⁸ began an air pollution control program based on reaching ambient air quality goals through an implementation plan that imposed specific requirements on air pollution sources. The 1970 CAA Amendments greatly expanded federal authority. National Ambient Air Quality Standards (NAAQS) would be established by EPA to be reached pursuant to a state implementation plan.⁹⁶⁹ An attainment date of 1975 was spec-

966. *Id.* at 1478 (listing five criteria for determining when political subdivision principally responsible).

967. *Id.* at 1478 (discussing EPA action).

968. *See generally* Pub. L. No. 90-148, 81 Stat. 485 (1967) (noting Air Quality Control Act).

969. *See* Pub. L. No. 91-604, 84 Stat. 1676.

ified, with a few exceptions.⁹⁷⁰ The pervasive failure to achieve these goals led to the 1977 CAA Amendments, which extended the compliance date to 1982, or 1987 for areas that could not meet ozone or carbon monoxide NAAQS due to transportation related emissions.⁹⁷¹ This effort also failed, although substantial progress was made in reducing the air pollution emissions from stationary sources per unit of production and from motor vehicles based on an emission per vehicle mile traveled.⁹⁷² When the 1990 CAA Amendments were enacted, 100 areas exceeded the ozone standard, fifty-one exceeded the SO₂ standard and twelve exceeded the lead standard.⁹⁷³ The 1990 Amendments provided more time for meeting NAAQS. For ozone, the most difficult pollutant to control, extensions as late as November 15, 2010 were provided for the most polluted areas.⁹⁷⁴ For the areas with marginal violations, compliance was to be achieved by November 15, 1993. Other areas compliance dates ranged between 1993 and 2010, but milestones are specified that must be met.⁹⁷⁵ Carbon monoxide nonattainment areas had an attainment date as late as December 31, 2000, for seriously polluted areas.⁹⁷⁶

Despite the twenty-five percent reduction in aggregate emissions of the six criteria pollutants since 1970, approximately 133 million people in 2001 lived in counties that violated one or more NAAQS.⁹⁷⁷ This number would be considerably lower if the PM_{2.5} and eight-hour ozone standards had not been promulgated July 18, 1997.⁹⁷⁸ Under the pre-1997 regulations, 40.2 million people live in counties that have ozone NAAQS violations and 11.1 million people live in counties with PM₁₀ NAAQS violations. About 3.4 million

970. See *supra* note 34 and accompanying text.

971. See Pub. L. No. 95-95; see Clean Air Act § 172(a)(2) (prior to 1990).

972. See generally William F. Pederson, Jr., *Why The Clean Air Act Works Badly*, 129 U. PA. L. REV. 1059 (1981) (discussing structure of CAA and suggesting amendments).

973. See U.S. ENVTL. PROTECTION AGENCY, NATIONAL AIR QUALITY AND EMISSIONS TRENDS REPORT, 1997, 67 (Dec. 1998) [EPA 454/R-98-016], at <http://www.epa.gov/oar/aqtrnd971>.

974. See Clean Air Act § 181, 42 U.S.C. § 7511 (2000) (noting 20 year attainment date for areas described as "extreme").

975. See generally Clean Air Act § 182, 42 U.S.C. § 7511a (2000) (noting plan submission and requirements).

976. See generally *id.* at § 186 (identifying attainment date for moderate and serious carbon dioxide areas).

977. See U.S. ENVTL. PROTECTION AGENCY, LATEST FINDINGS ON NATIONAL AIR QUALITY 2001 STATUS TRENDS 1 (Sept. 2002) [EPA 454/K-02-001] [hereinafter 2001 Status and Trends].

978. See National Primary and Secondary Ambient Air Quality Standards, 40 C.F.R. §§ 50.7, 50.10 (1997) (promulgating standards).

people live in areas violating any of the other four NAAQS.⁹⁷⁹ In 1990 there were 230 nonattainment areas; in 2001 there were 130 nonattainment areas. In 2002, forty-one states and the District of Columbia exceeded the ozone standard nearly 9,000 times, a ninety percent increase from 2001.⁹⁸⁰ Solving the nation's air pollution problem turned out to be more difficult than expected in 1967, but progress is being made. Some of the reasons for the failure of many SIPs to meet the NAAQS are listed, and briefly discussed below.

(1) The air quality problems the CAA has been attempting to correct are exacerbated by increases in population and consumption. The 1970 U.S. resident population of 203.984 million grew to 249.464 million by 1990, and grew to 275.130 million in 2000.⁹⁸¹ U.S. energy use, which is responsible for most air pollution, went from 66.43 quadrillion Btus in 1970⁹⁸² to 84.2 quads in 1990.⁹⁸³ Electric power generation, the most significant stationary source of air pollution, grew from 1532 billion kilowatt hours (KWh) in 1970⁹⁸⁴ to 2795 billion KWh in 1990.⁹⁸⁵ Energy consumed by the highway transportation sector grew from 15.32 quads in 1970 to 21.66 quads in 1990 to 26.52 quads in 2000.⁹⁸⁶ The size of the motor vehicle fleet in the U.S. grew from 108 million vehicles in 1970 to 189 million vehicles in 1980 and to 220.5 million vehicles in 2000.⁹⁸⁷ The effect of this growth was to nullify much of the progress made under the Clean Air Act.⁹⁸⁸

979. See 2001 Status and Trends, *supra* note 977, at 5.

980. See Pamela Najor, *Air Quality Standards: Exceedances of Ozone Standard Increases 90 Percent in One Year*, PIRG Report Says, 34 Env't Rep. (BNA) 1924 (Sept. 5, 2003) (noting states exceeded ozone standard).

981. See STACY C. DAVIS & SUSAN W. DIEGEL, Transportation Energy Data Book 11-3, tbl. 11.2 (22nd ed. 2002) [Oak Ridge nat. Lab. ORNL-6967].

982. See COUNCIL ON ENVTL. QUALITY, ENVIRONMENTAL QUALITY, TWENTIETH ANNUAL REPORT 426 (1990).

983. See DAVIS & DIEGEL, *supra* note 981, at 2-3, tbl. 2.1 (listing United States consumption of total energy from 1973-2001).

984. See ENVTL. QUALITY, *supra* note 982, at 446.

985. See DAVIS & DIEGEL, *supra* note 981, at 2-8, tbl. 2.6.

986. See *id.* (listing Highway Transportation Energy Consumption from 1970-2000).

987. See *id.* at 6-5, tbl. 6.3 (listing automobile and truck use from 1970-2000).

988. See generally Arnold W. Reitze, Jr., *Environmental Policy - It Is Time For a New Beginning*, 14 COLUM. J. ENVTL. L. 111 (1989) (discussing theme regarding needed defenses in CAA in more detail).

The ability of the SIP program to comply with the NAAQS will continue to be challenged by growth in the population and in energy use. President Bush's National Energy Policy Development Group estimates that in the next twenty years U.S. oil consumption will increase thirty-three percent and electricity demand will increase forty-five percent.⁹⁸⁹ The Bush Administration projects a need for an additional 393,000 MW of generating capacity in the next twenty years,⁹⁹⁰ which will require between 1,300 and 1,900 new power plants to be constructed or about sixty to ninety plants per year.⁹⁹¹ This projection is unlikely to occur, but the use of energy is expected to grow substantially. Much of the increase in electric power baseload generation capacity will be fueled by coal with the attendant air pollutant emissions.⁹⁹² Petroleum consumption is expected to rise from 19.5 million barrels per day in 2000 to 25.8 million barrels per day in 2020, primarily because of the demand for fuel for transportation.⁹⁹³ Thus, SIP's can be expected to be periodically revised to continue the trend of increased stringency and higher costs.

(2) Although Congress passed the CAA Amendments and the President signed them into law, those concerned with the costs of air pollution control are working to control the costs of implementing the CAA. Some sources are seriously burdened because the CAA imposes its costs unevenly. Economic growth in some areas of the nation is restricted more than in other areas. Some industries faced huge compliance costs while dealing with stiff foreign competition. This leads to political opposition to new air pollution controls. The various administrations, acting through the Office of Management and Budget have slowed or stopped regulations or required that they be rewritten to lower costs to the private sector. The appropriation process is used by Congress to limit the money needed to implement the CAA. The Congressional over-

989. See NATIONAL ENERGY DEVELOPMENT GROUP, NATIONAL ENERGY POLICY X (May 2001).

990. See *id.* at 1-4 (discussing projected electricity demand over next 20 years).

991. See *id.* at 1-6, fig. 1.2 (showing projected power plant needs).

992. See *id.* at 1-6 (discussing projected use of coal as energy source).

993. See *id.* at 1-10, 1-13 (discussing future petroleum demands).

sight process has sometimes been used to limit EPA's aggressive pursuit of the CAA goals.⁹⁹⁴

(3) The 1970 CAA demanded a ninety percent reduction in motor vehicle emissions. This anticipated reduction from motor vehicles was programmed into SIPs through the modeling assumptions that states used to develop an air program and led to underpredicting of overall emissions. The mobile source air pollution program is very successful when compared to other pollution control programs, but achieving a ninety percent reduction in emissions has been difficult. Further, both vehicle miles traveled (VMT) and the energy consumed by transportation were increasing more rapidly than projected by the emission inventories used to implement the 1970 CAA. This helped create nonattainment status for much of the urbanized United States. Moreover, the mix of vehicles changed dramatically as the number of trucks grew from 18.8 million in 1970 to 54.47 in 1990, to 87.1 million in 2000,⁹⁹⁵ which increased fuel consumption. The shift in the mix of vehicles resulted in a greater portion of VMT in an area is driven by light truck and SUVs, which usually have higher emissions. Heavy duty trucks are an even more serious problem. In the Metropolitan Washington D.C. area, for example, heavy-duty diesel vehicles account for less than three percent of the VMT, but produce about thirty percent of the NO_x emissions.⁹⁹⁶ Diesel engines are not subject to more stringent regulations until 2007.⁹⁹⁷

(4) From 1982 to 1997, developed land increased by forty-seven percent, but the population increased by only seventeen percent. This dispersion of the population con-

994. See generally Richard Lazarus, *The Neglected Question of Congressional Oversight of EPA: Quis Custodiet Ipsos Custodes (Who Shall Watch the Watchers Themselves)?* 54 LAW & CONTEMP. PROBS. 205 (Autumn 1991) (discussing congressional oversight of EPA and assessing its impact); see also generally Richard Lazarus, *The Tragedy of Distrust in the Implementation of Federal Environmental Law*, 54 LAW & CONTEMP. PROBS. 205, 311 (Autumn 1991) (discussing effect of distrust in environmental policy).

995. See DAVIS & DIEGEL, *supra* note 981, at 6-5, tbl. 6.3 (discussing FHWA data).

996. See XI TPB News (National Capital Region Transportation Planning Board), Jan. 2003, at 6:1.

997. See generally Special Exemptions from Requirements of the Clean Air Act, 40 C.F.R. at pts. 69, 80, 89, 1039, 1068 (discussing diesel fuel); see also Control Emissions of Air Pollution From Nonroad Diesel Engines and Fuel, 68 Fed. Reg. 28,332 (May 23, 2003) (codified at 40 C.F.R. pts. 69, 80, 89, 1039, 1065, 1068).

tributed to VMT growth that for the last thirty years has increased roughly at a rate four times faster than the population.⁹⁹⁸ Most air quality planning occurs with little concern for the impact of land use. Transportation air quality plans are based on projections of growth in VMTs with little concern for utilizing land use planning that will be more protective of air quality.⁹⁹⁹ Sprawl is more strongly correlated to peaks levels of ozone than is per capita income or employment levels.¹⁰⁰⁰

(5) The mathematical models used to develop the SIPs projected overly optimistic reductions because:

- (a) incorrect data was used as inputs in many models;
- (b) linear rollback models that initially were used did not work well, especially for ozone because its atmospheric formation is complex, and more sophisticated models subsequently used also had significant limitations; and
- (c) unjustified assumptions concerning the effectiveness of various control strategies were used in SIPs.¹⁰⁰¹

A report of EPA's Inspector General reported that air pollution control strategies are threatened by unreliable emission factors used to estimate releases from stationary sources.¹⁰⁰² Emission factors are used to estimate air releases when more reliable data is unavailable. In 1985, EPA used 2073 emission factors; in 1996 it used more than 16,000. Almost half were not rated for reliability, and thousands were considered to have below average or poor reliability. The problem, according to EPA's Inspector General, was the result of EPA alliance with industry in developing emission factors.¹⁰⁰³ While the validity of models continues to improve, their

998. See U.S. GEN. ACCOUNTING OFF., *FEDERAL INCENTIVES COULD HELP PROMOTE LAND USE THAT PROTECTS AIR AND WATER QUALITY* 14 (Oct. 2001) [GAO-02-12].

999. See *id.* at 35.

1000. See Smart Growth America, *Measuring Sprawl and Its Impact* (2003), at www.smartgrowthamerica.org/sprawindex.sprawindex.html (last visited Aug. 24, 2003).

1001. See U.S. GEN. ACCOUNTING OFFICE, *OZONE ATTAINMENT REQUIRES LONG-TERM SOLUTIONS TO SOLVE COMPLEX PROBLEMS* (1988) [GAO/RCED-88-40].

1002. See EPA: *IG Says Too Many 'Emission Factors' Unreliable in Estimating Air Releases*, Daily Env't Rep. (BNA), Dec. 19, 1996, at A-7 (indicating threats to air pollution control strategies).

1003. See *id.* (noting EPA inspector general's reasoning).

costs have become significant. In 2002, the Washington D.C. region spent over \$400,000 in four months to model and test the air quality conformity of its proposed long-range transportation plan and its transportation improvement plan.¹⁰⁰⁴ Maintaining and applying the models in this region requires about thirty-six percent of the transportation planning budget, or about \$2.9 million per year.¹⁰⁰⁵

(6) The CAA regulated new sources much more stringently than existing sources. The expectation was that over time air quality would improve as existing sources were replaced. The costs of complying with the CAA, however, led industry to maintain existing facilities beyond their expected useful life. Thus, the imposition of new source standards moved more slowly than originally expected. The New Source Review (NSR) program has been very controversial, and the adverse impact on air quality of old electric power plants is an ongoing controversy.¹⁰⁰⁶

(7) Control measures were not implemented because:

(a) technology was not available or was too costly to use; or

(b) local opposition prevented the quick and effective implementation of strategies such as I/M and Stage II vapor recovery.¹⁰⁰⁷

(8) Gasoline volatility was increased by the refiners, in part to compensate for the effects of not using lead additives in gasoline because more "light ends such as butane,

1004. See *Forecasting Future Travel*, 42 REGION 21 (National Capital Region Transportation Planning Board 2003).

1005. See *id.*

1006. See generally Arnold W. Reitze, Jr., *State and Federal Command-and-Control Regulation of Emissions from Fossil-Fuel Electric Power Generating Plants*, 32 ENVTL L. 369 (2003) (discussing NSR and other control programs).

1007. See generally Arnold W. Reitze, Jr., *Federalism*, *supra* note 94; see also Prevention of Significant Deterioration (PSD) and Nonattainment New Sources Review (NSR): Baseline Emissions Determination, Actual-to-Future-Actual Methodology, Plantwide Applicability Limitation's Clean Units, Pollution Control Projects, 67 Fed. Reg. 80,186 (Dec. 31, 2002) (codified at 40 C.F.R. pts. 51, 52) (revising NSR program); Prevention of Significant Deterioration (PSD) and Non-Attainment New Source Review (NSR): Equipment Replacement Provision of the Routine Maintenance, Repair and Replacement Exclusion, 68 Fed. Reg. 61,247 (Oct. 27, 2003) (finalizing revisions to NSR); Todd A. Stewart, *E-Check: A Dirty Word in Ohio's Clean Air Debate — Ohio's Battle Over Automobile Emissions Testing*, 29 CAP. U. LAW REV. 265 (2001) (discussing emissions test).

benzene and zylene were in the fuel.”¹⁰⁰⁸ This resulted in increases in VOC emissions in the 1980s that led to new provisions in the CAA to control Reid Vapor Pressure (RVP), which is the measure of gasoline volatility.¹⁰⁰⁹

(9) Control measures and other requirements of the CAA were not always adequately enforced. EPA’s civil judicial settlements numbered 215 in FY 1999, 219 in FY 2000, 221 in FY 2001 and 216 in FY 2002.¹⁰¹⁰ In FY 2002, EPA issued about 1,300 administrative orders, and 250 criminal cases were referred to the Department of Justice.¹⁰¹¹

(10) Ozone transport from upwind states has not been effectively controlled by the CAA’s programs. This means that downwind areas are held hostage to regulatory and enforcement efforts made by upwind states.¹⁰¹² Moreover, EPA has been willing to grant extensions due to ozone transport to areas that have not implemented the applicable rate of progress requirements.¹⁰¹³

(11) There is no punishment imposed on a state or its elected officials for a failure to achieve the goals of the SIP. The development and implementation of a stringent SIP-based program, however, could lead to the subsequent defeat of an elected official. Thus, there is little incentive for an elected official to aggressively pursue CAA compliance. Moreover, the probability that EPA will promulgate a FIP is small.

(12) EPA threatens to impose sanctions, but it virtually never imposes them. In 1997, the Congressional Research Service reported that the only area in the nation that was

1008. See Henry A Waxman, et al., *Cars, Fuels, and Clean Air: A Review of Title II of the Clean Air Act Amendments of 1990*, 21 ENVTL. L. 1947, 1973 (1991) (noting changes in gasoline over years).

1009. See Clean Air Act § 211(h), 42 U.S.C. § 7545(h) (2000) (controlling provisions of RVP).

1010. See *Summary of EPA Enforcement Statistics for Fiscal Year 2002*, 34 Env’t Rep. (BNA) 332 (Feb. 7, 2003) (noting statistics).

1011. See U.S. ENVTL. PROTECTION AGENCY, FISCAL YEAR 2002 ENFORCEMENT AND COMPLIANCE ASSURANCE ACCOMPLISHMENTS REPORT (2003). Most of the effort to enforce environmental laws is at the state level, which results in uneven enforcement. See *id.*

1012. See *supra* §§ 3-5. See generally Douglas R. Williams, Cooperative Federalism and the Clean Air Act: A Defense of Minimum Standards, 30 ST. LOUIS UNIV. PUB. L. REV. 67 (2001) (discussing federal air standards).

1013. See Williams, *supra* note 1012, at 94.

subject to an EPA-imposed sanction was a small area in East Helena, Montana.¹⁰¹⁴

(13) In 1990, Congress in section 182(g) provided for milestones to be used to measure progress in meeting the NAAQS for ozone.¹⁰¹⁵ If appropriate progress is not made, EPA can force the state to have the area reclassified or require implementing additional measures.¹⁰¹⁶ EPA, however, has been criticized for the collapse of the milestone program, which prevents state failures from being identified and remedied.¹⁰¹⁷

§ 8. CONCLUSION

The SIP program may have largely outlived its usefulness, but after more than thirty years of evolution, drastic change may be more harmful than beneficial. Most likely, SIPs will continue to become both more complex and irrelevant. The weakness of the SIP process is not due to a failure to accomplish its goals. Since 1970 the gross domestic product has increased by 164 percent and energy consumption in up forty-two percent, yet the aggregate emissions of the six criteria pollutants is down forty-eight percent.

The SIP's failure is related to the premise that air pollution is a localized phenomenon that is best handled as a state program with minimum federal involvement. That changed over the years as federal mandated measures became an increasing portion of the emission reduction demanded by the SIP. The CAA's subchapter II program for mobile sources and their fuels have, since 1970, played an important role in determining the effectiveness of the SIP program. The inspection and maintenance program for in-use motor vehicles, the use of reformulated gasoline and conformity planning that are discussed in the body of this article are examples of the SIP process being federalized in order to obtain the reductions necessary to have a SIP that projects attainment. The sulfur dioxide control program under CAA subchapter IV has become the most important program for sulfur emissions control, yet it operates largely outside of the SIP program.

1014. See *id.* at 95.

1015. See 42 U.S.C. § 7511a(g) (2000) (describing milestones).

1016. See Clean Air Act § 182(g)(3), 42 U.S.C. § 7511a(g)(3) (2000) (noting EPA measure if state fails milestones).

1017. See Thomas O. McGarity, *Missing Milestones: A Critical Look at the Clean Air Act's VOC Emissions Reduction Program in Nonattainment Areas*, 18 VA. ENVTL. L. J. 41, 51-55 (1999) (discussing EPA's enforcement of milestone program).

In the future, federally mandated measures will be the major cause of the additional emissions reductions that are needed if progress is to be made. The heavy-duty diesel rule and the associated sulfur reduction from diesel fuel will provide significant air quality improvement. Additional control on nonroad vehicles and more stringent Tier 2 requirements for motor vehicles also will be important. The eight-hour ozone standard and the PM_{2.5} standard will require more effort to be made to control interstate transport of pollution if these air quality standards are to be met. The pending Clear Skies legislation, or some variant, will add additional federal limitations on emissions. Finally, the continued promulgation and implementation of MACT standards to control air toxics impose federally-based limitations on emissions from major sources. The effect of these legislative and regulatory requirements will be to continue the trend of reducing the importance of state SIP implementation.